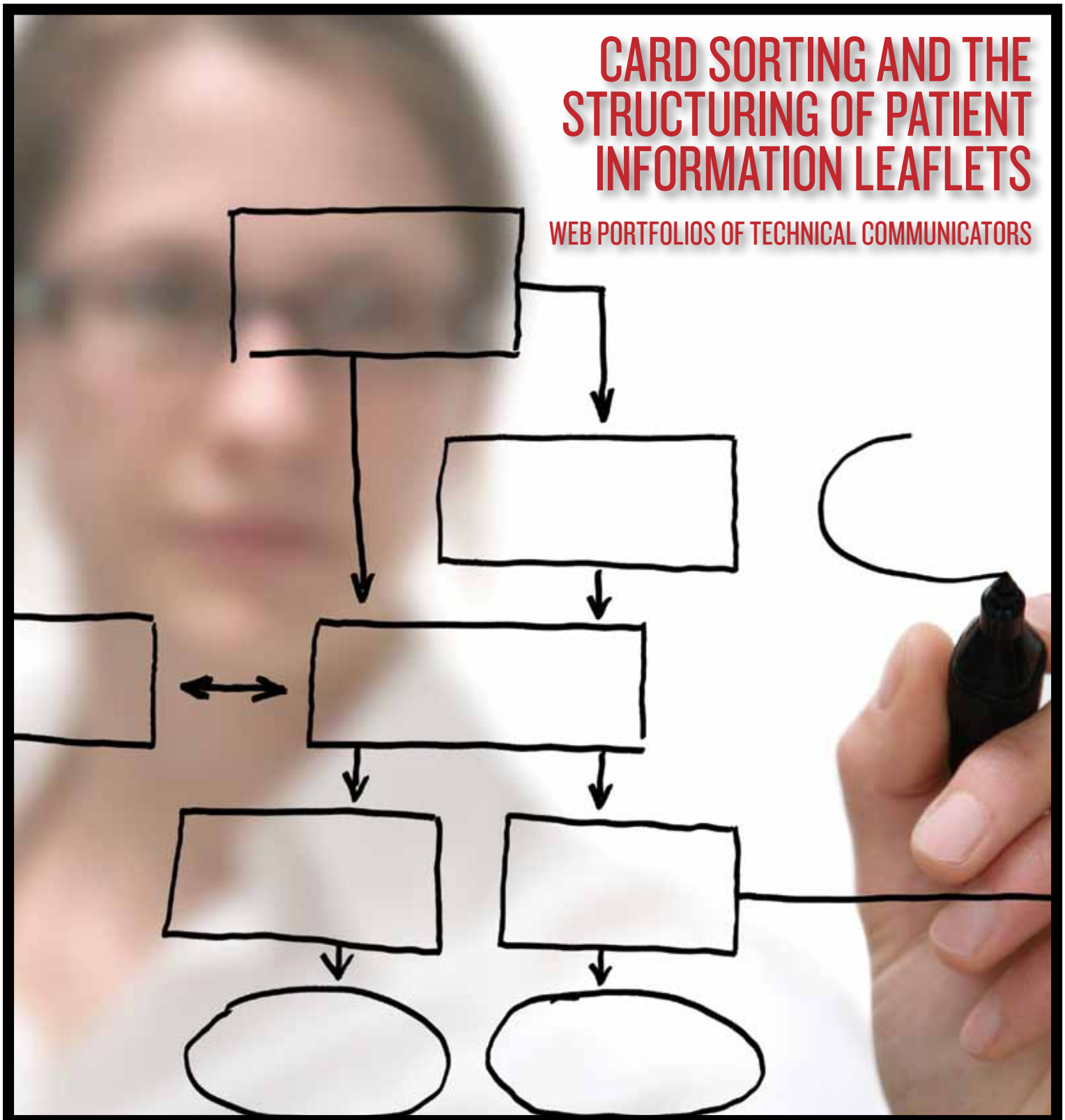


Technical COMMUNICATION

Journal of the Society for Technical Communication

CARD SORTING AND THE STRUCTURING OF PATIENT INFORMATION LEAFLETS

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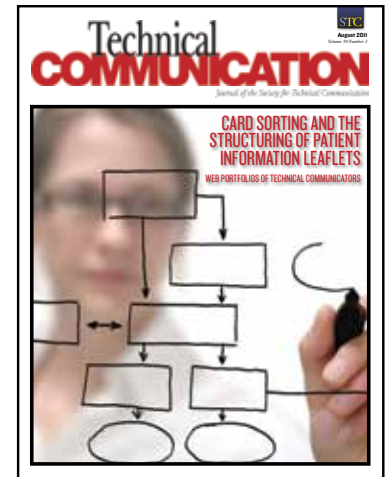
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About the Journal

Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

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Menno D.T. de Jong, Editor

Exploring the Borders of Technical Communication: Health Communication

Editorials from earlier this year discussed the relationship between technical communication and two other communication-related disciplines: corporate and organizational communication and human-computer interaction. In both cases, the attention to functional texts, writing, and document design appeared to be important distinctive features of our discipline. This editorial focuses on the relationship between technical communication and health communication. Health communication comprises health education and various subdisciplines that focus on specific health-related issues (tobacco, alcohol, drugs), target groups (adolescents), or media (the Internet). Health communication topics can also be found in broader outlets focusing on, for instance, preventive medicine or health policy.

The fields of health and technical communication share some fundamental characteristics: their practical focus (the undisputed underlying goal is to optimize communication effectiveness), their connection between an academic and a professional discipline, and their process orientation (the research attention for the systematic way communication is designed). *Technical Communication* has included several health-related articles in the past years, and

one of the articles in this issue is a clear example. Most health communication literature appears to focus on the strategic aspects of persuasive communication. But health-related articles in technical communication outlets typically involve the design of complex functional documents or Web sites. Technical communication research complements the health communication body of knowledge by investigating the problem of complex information design, in particular the design of informative and instructive documents.

Comparing Disciplines

It is clear that technical communication researchers may contribute to the body of health communication knowledge, and that technical communication professionals may contribute to methods for communicating health-related topics. But what can we as a discipline learn from the discipline of health communication?

A first issue that comes to mind is a more systematic attention to target audiences. The health communication literature focuses a good deal of attention on the health-related beliefs, attitudes, and behaviors of specific groups of people. This attention seems to be less prominent in the technical communication literature, but the approach has potential. One can



think of the distinction between novice and expert users, but also between users with different educational levels and from different age groups.

A related issue involves medium choice. In the health communication literature, the selection of information sources by target audiences appears to be an important research topic. In technical communication the medium used is more often treated as a given. It may be worthwhile to focus more on users' media preferences in our research.

Two types of messages are studied in the health communication literature: communication that may cause problematic behaviors (e.g., the effects of alcohol advertisements or product placement), and communication that is designed as an intervention to promote healthy behaviors (e.g., a commercial, a brochure, or a training program). The technical communication literature focuses mainly on the second type of article: designing communication to serve the users. But what about the first type? Further reflection on factors that complicate the use of technology would be more than welcome. Such articles could address the

flaws in the design of technical products that must be remedied by the technical communicator, or even the fundamental problems of communicating about technology with lay users.

Another difference may be the stronger theoretical embedding of research contributions. In health communication, many articles build on existing theoretical frameworks. For instance, when researchers address the strategies of promoting behavioral change, the theory of planned behavior is often used to motivate and design the research. The theory states that people's behaviors are affected by (but are not the same as) their behavioral intentions, and that their behavioral intentions may be affected by their attitudes toward the behavior, the social influence, and their perceived behavioral control. In technical communication, empirical studies are strongly embedded in earlier research, but the earlier research often does not have the status of explicit theories that may be expected to help predict future behaviors.

Finally, the health communication literature includes many articles that focus on the design and effects of specific health promotion interventions. Such articles are generally concise and straightforward. *Technical Communication* has the article category to facilitate such articles (case history) and even offers the possibility of publishing additional materials (such as the communication itself) online. Our discipline might benefit from more articles in which technical communicators describe and

motivate their communication product, and report on qualitative evaluation results or an experimental comparison.

This comparison of the two disciplines identifies ways in which technical communication professionals and academics may contribute to the field of health communication. The comparison also pointed out a number of topics and approaches that currently seem to be underexposed in our field. It may be worthwhile to further explore the relevance of these topics and approaches in the future.

In This Issue

In this issue's first article Henk Pander Maat and Leo Lentz describe how card-sorting research may contribute to the effective organization of patient information leaflets. Their study is both methodologically and practically relevant. The article gives a clear demonstration of the use of (closed and open) card-sorting techniques that may be used by technical communication professionals. These techniques contribute to the toolkit of applied research techniques that seems to be so important for our discipline. Not ivory tower research, but research that practitioners can use to optimize communication design processes. The article also provides interesting insights into the organization of the specific document genre of patient information leaflets. These leaflets may make the difference between effective and ineffective medicine use and even between life and death. There is still a lot to be learned about the design of such documents. Interestingly, an official

attempt to serve the interests of the users, in the form of a template prescribed by the European Union, appeared to be counter-productive. This raises questions about the best way to serve the users. Stronger involvement of technical communicators and user research seem to be important factors for a successful template.

In the second article, John Killoran describes a new step in his research into the marketing communication of independent technical communicators and technical communication agencies. Last year, he published two articles that focused on how potential clients may be attracted to the Web sites of technical communication professionals and agencies, addressing offline as well as online techniques, with special attention to search engines. In his current article, he addresses the content of such Web sites. Portfolios are a potentially strong instrument to convince potential clients of the required skills and expertise. He analyzes the actual use of portfolios and their perceived usefulness, but also addresses related issues such as confidentiality and intellectual property of the works.

Using Sorting Data to Evaluate Text Structure: An Evidence-based Proposal for Restructuring Patient Information Leaflets

Henk Pander Maat
Leo Lentz

Abstract

Purpose: This paper assesses the text structure imposed on patient information leaflets in the European Union (EU). It proposes an alternative structure based on reader-oriented research.

Method: Two card-sorting studies were used to identify reader expectations. In a closed card-sorting study, participants were provided with scenario questions on medication use and were asked under which of the template headings they expected to find information on each question. In an open sorting task, the schemata of patient information leaflet readers were explored. In this study, participants sorted a large set of sentences that can be found in actual patient information leaflets.

Results: The closed card-sorting study reveals that users provided with the EU template structure do not always look at the correct section when searching information about patient situations. The results of the open card-sorting study indicate that readers prefer the following structure: goal of the medicine – directions for use – potential problems – packaging and storage.

Conclusion: Card-sorting data help to evaluate and design text structures for genres such as patient information leaflets. The European template does not match users' expectations concerning the leaflet's structure. There is a mismatch between the wording of headings and reader interpretations. A second mismatch has to do with classifying and grouping information. Patient information presented in the alternative format may be expected to improve reading performance.

Keywords: patient information, reader expectations, structure, evaluation, card sorting

Practitioner's Takeaway

- Regulating authorities should be careful when imposing obligatory text structures or headings, since these may be at odds with reader expectations and thus decrease the findability of information.
- Sorting studies, both closed and open ones, are most useful for investigating reader expectations concerning text structures.

Using Sorting Data to Evaluate Text Structure

Introduction

Text genres come with corresponding genre schemata or move structures, specifying what will be discussed and in what order. Genre conventions serve readers by providing a collectively shared shorthand for interpreting information (Kostelnick & Hasset, 2003). They help readers to scan a page and identify relevant information on the basis of structural expectations. For instance, an experienced reader of scientific articles in the experimental tradition is thoroughly acquainted with their structure (Swales, 1990), and the same goes for book reviews (Toledo, 2005) and application letters (e.g., Henry & Roseberry, 2001; Upton & Connor, 2001), to mention just a few well-established text genres. For most genres, these conventions have evolved in an interactive process within a certain discourse community of writers and readers. But some schemata are being “enforced” upon writers (and readers) by gatekeeping institutions. For instance, many scientific journals instruct authors to follow a certain structure, not only in their articles as a whole but even in particular sections such as the abstract. Imposing genre conventions may benefit readers, but it can also hinder writers because it does not allow them to further develop and improve their texts in order to better meet changing reader expectations. As Kostelnick and Hasset (2003) state, in such instances the social contract imprisons users, rather than fostering cooperation between designers and readers.

A particularly strong case of genre schema enforcement is provided by the European regulatory efforts concerning patient information leaflets (PILs) handed out with medicines. Not only the contents but also the structure of the PIL is constrained to such a degree that Askehave and Zethsen (2003) speak of a mandatory genre. Regarding their structure, these leaflets should comply with a so-called *template* published by the Quality Review of Documents (QRD) group of the European Medicines Agency (EMA). This template is currently available in 25 European languages; the English version is annotated with instructions (for leaflet writers) about what information has to be placed under the various headings. The template can be downloaded from the EMA Web site (EMA, 2006).

The crucial question is, to what extent does the template benefit readers of patient information and to what extent does it hinder them? In an earlier study (Pander Maat & Lentz, 2009), we concluded that readers experienced serious problems in finding information in three patient information leaflets, of which two were designed according to the template. This study did not reveal a template benefit for readers, because the two documents that did comply with the template did not demonstrate better findability of information than the document that was produced before the template was mandated.

This raises the question of what expectations about the structure of the document readers will activate when confronted with patient information leaflets, and how these expectations compare to the text structure actually encountered. More generally, this study addresses the question of how to use empirical data in evaluating and redesigning text structures. This issue cannot be dealt with by performing a simple experiment with two or three design options, since the number of possible structures is far too large for that. What is needed here is a methodology to select promising text structures that may be subsequently tested experimentally.

We suggest that sorting tasks may provide this kind of information. Hence this paper sets out to investigate PIL structure expectations by means of sorting tasks. The first study, which can be characterized as a *closed* sorting task, provides a direct test of the present template. In this study, participants were provided with scenario questions on medication use and were asked under which of the template headings they expected to find information on each question. This first study provides information on items that do not fit naturally in the current headings, and on heading formulations that lead to unintended interpretations. However, it does not address the question of how users themselves might structure patient information. This was the purpose of the second study, in which we used an *open* sorting task to explore the schemata of PIL readers. In this study, participants sorted a large set of sentences that can be found in actual patient information leaflets. We were specifically interested in differences between the sorting results and the present European template.

The Structure of Patient Information Leaflets

European Template

In 1998 the European Community issued a directive that requires pharmaceutical companies to base their leaflets on a template. This so-called QRD template regulates four aspects of package leaflets: (1) the content elements that must be present; (2) the order in which these topics should be discussed; (3) the headings to be used for paragraphs and subparagraphs; and (4) the wording of a number of specific passages. In its present state, the structure of the document and the headings are as follows:

1. What is X and what is it used for?
2. Before you take X
 - Do not take X
 - Take special care with X
 - Taking other medicines
 - Taking X with food and drink
 - Pregnancy and breast-feeding
 - Driving and using machines
 - Important information about some of the ingredients of X
3. How to take X
 - If you take more X than you should
 - If you forget to take X
 - If you stop taking X
4. Possible side effects
5. How to store X
6. Further information
 - What X contains
 - What X looks like and contents of the pack
 - Marketing authorization holder and manufacturer
 - This leaflet was last approved in (date)

Clearly, a template like this takes many decisions out of the hands of medical writers. But will it also help readers?

Earlier Studies of Leaflet Comprehension

A fixed document structure might be a good thing, if it helps readers to scan the document and find relevant information. It might also help readers to “learn” the genre, by building a mental representation of its structure. Morrow, Leirer, Andrassy, and Tanke (1996) and Morrow, Carver, Leirer, and Tanke (2000) have repeatedly shown that medication instructions that follow the users’ *medication schema*, as they call it, may help users recall instructions. In Morrow et al. (1996), this medication schema was first constructed by having participants of different ages sort 10 short instructions regularly appearing in medication leaflets. For three fictional medicines, sentences with information on these topics were printed on 10 cards, preceded by topic label. Participants generally sorted these cards into two categories: “the medication and how to take it” and “potential problems associated with taking the medication and what to do if they occur.” The participants were also asked to provide their preferred order of appearance in an actual medication instruction. Generally, a “medication” section (*name – purpose*) precedes a “how to take it” section (*dose – schedule – duration*), followed by a “problems” group (*warnings – mild side effects – severe side effects – emergency*).

In an experiment, three versions of the instructions were designed. In the *compatible* instructions, the items were presented in the preferred grouping and in the preferred order of appearance. In the *category* version, the grouping was preserved but not the order. In the *scrambled* version, all items were in nonpreferred positions. The scrambled version yielded significantly poorer recall scores than either the compatible or the category version. Interestingly, even when presented with a scrambled version, participants tended to recall items in the preferred order.

Although these medication instructions are extremely short compared to the European PILs, these results are certainly relevant for the European PIL template. They suggest that readers actually have structural expectations for medication instructions and that following these expectations may improve the usability of these instructions.

Does the current template reflect the readers’ expectations? To our knowledge, its design is not based on such research. An earlier usability study on three Dutch PILs (Pander Maat & Lentz, 2009) revealed that

Using Sorting Data to Evaluate Text Structure

finding information is the main problem of PIL users. The structure imposed by the template even seems to cause a number of findability problems:

- Participants have problems finding information about ingredients that could produce allergic reactions. According to the template, the ingredients must be presented in the final section, under the obligatory heading “Further Information.” However, participants expected to find this information in the earlier paragraph headed “Before you use X.” Clearly, the heading “Further Information” does not help users to locate information.
- Participants could not always find information on how to administer the medicine. This information has no separate heading in the template. Neither are there headings for information concerning the dose, the time to take, and how long to take the medicine. Hence, the directions for use often take the form of a long stretch of instructions without any visible structure.

These results suggest that the European template does not completely fit the expectations of participants searching for information. However, they had not been confronted with the template as such, but with real-life patient information leaflets in which much more information was presented than the headings of the template. Hence, we designed a study with the specific purpose to test the template.

Closed Card-Sorting Study

Materials, Participants, and Procedure

Card sorting is a well-known method in psychological research into knowledge organization (Rugg & McGeorge, 2005) and text comprehension (McNamara, Kintsch, Songer, & Kintsch, 1996); it is also used for investigating Web site designs (Spencer & Warfel, 2004; Stalker-Firth, 2007). Apart from studies by Morrow, Leirer, Altieri, and Tanke (1991) and Morrow et al. (1996, 2000), we know of no earlier application of the method to the study of written text organization. In closed card-sorting exercises, participants receive a set of

cards as well as the names of the categories into which to sort them. This method can be used to test to what extent a predefined classification is usable for sorting a set of information items.

Our participants were invited to locate the answer to scenario questions under the current template headings. In order to test the bare template, the participants were confronted with a manipulated leaflet that had the look and feel of a real patient information leaflet, in which only the headings were readable. The document was a version of an existing leaflet for Rosuvastatine (brand name Crestor), in which the entire body text—except the headings—had been changed into bogus Latin while retaining the layout and typography (the way editors sometimes do for dummy documents). The headings were preserved, as these were the items to be tested. We could have used a more traditional card-sorting method by just presenting cards (with medication questions) and headings as sorting categories, but in our view ecological validity would be higher if the materials had the look and feel of real patient information leaflets. Thus, the headings were not presented as boxes into which cards could be placed, but as structuring devices of a real document. Participants were asked to point at the heading they thought was relevant for each medication question.

A content analysis of Dutch PILs yielded a list of 34 topics regularly present in leaflets. In principle all these topics could be assigned a scenario question, but seven of them were disregarded for the closed sorting study because they seemed less important in terms of medicine usage (e.g., manufacturer, name of registration), because the information was too general to be searched for (e.g., the general introduction of the side effects section stating that all medicines have side effects and the advice to consult your doctor in case of unknown side effects), or because they were difficult to relate to a single heading (e.g., a change in your physical condition). Hence the questionnaire contained 27 questions. They can be found in Appendix 1 to this paper on the *Technical Communication* Web site. Additionally, participants filled out a short questionnaire on demographic variables and medication use.

Participants were recruited in the networks of our students. There were 46 participants, 21 women and 25 men. Their mean age was 37.5 (SD 17.1). Only 6% of them had received more than three medicine

prescriptions the past year. Thirty-nine percent of them reported always reading the patient information leaflet. The PIL reading experience correlated significantly (.30, $p < .05$) with the total success score and the total localization time of the participants ($-.35$, $p < .01$).

First, the participants were introduced to the dummy leaflet with Latin text and Dutch headings. They were allowed to scan the document for one minute. Then the interviewer introduced the task as follows: "I will ask you some questions you may have when coming home after receiving this medicine. Could you tell me where you would expect to find the answer to each question?" The interviewer read the question and presented a card with this question to the participant. After the participant had mentioned the heading under which the answer was expected to be found, the next question was asked. The mean test duration was 21 minutes.

Results

The mean proportion of correctly located questions was .77, which comes close to the results of Pander Maat and Lentz (2009), who reported a localization success score of 75%. They concluded that readers had problems finding information about ingredients and directions for use. The two questions on ingredients in the present study were located successfully by 65% to 70% of the participants. For instance, a scenario question about lactose allergy taught us that the heading "Important information about some of the ingredients of X" is not understood as referring to potentially allergenic ingredients (success score 65%). Neither is this kind of information regularly expected under the later headings

"Further Information" and its subheading "What X contains," because the earlier and quite general heading "Before you take X" is thought to be more relevant for the topic of allergenic ingredients.

The lowest success scores were found in three questions on user directions, as Table 1 shows.

Reflecting on the incorrectly chosen headings in the last column, most of these are phrased very generally: "what is X?," "before you take X," "further information." It seems that given the absence of specifically relevant headings, readers often turn to all-encompassing headings such as these.

"Taking X with food and drink" is incorrectly assumed to refer to the time between doses; apparently, this category is read as referring to a special kind of "How to take X" information. Possibly, readers search in vain for a heading about when to take the medicine, which is lacking in the present structure. Moreover, "Taking X with food and drink" is not strongly associated with information on alcohol use.

A more specific heading like "How to store X" is not uniformly associated with disposal of the medicine. It can be argued that storing the medicine is the opposite of disposing of it. Hence the two concepts belong together, but one of these cannot function as the heading for both topics. It seems that the heading needs to be more general.

Conclusions

Some of the mismatches found in this study may be due to the phrasing of particular headings. On the other hand, we need to realize that the heading set as a whole is a classification that might not fit the lay classification

Table 1. Finding scores for three questions on user directions in the closed sorting tasks.

Question	Success score	Correct heading	Incorrectly chosen headings
1. You are going to a party tonight. Can you use alcohol with this medicine?	.35	Taking X with food and drink	What is X and what is it used for? Before you take X
2. You take your pills twice a day. How much time must pass between doses?	.41	How to take X	Taking X with food and drink
3. Can you throw this medicine into the dustbin when the expiry date has passed?	.46	How to store X	Further information If you stop taking X

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of leaflet users. Information classification deals with the quite fundamental question of what subtypes of information are to be grouped together and what subtypes are better kept apart. This brings us to the second study.

Open Card-Sorting Study

Materials

In open card-sorting studies, participants are presented with a set of cards and asked to sort these into different groups, according to their own perspective on the subject of the cards.

The general idea of this study was to have participants “recreate” their own information leaflet by providing them with a collection of sentences from actual patient information leaflets. In the literature, the maximum number of cards to be sorted is around 100, but usually a much smaller number is used (around 30). We aimed for a number of cards in between these boundaries.

A content analysis of Dutch PILs yielded a list of 34 topics regularly present in leaflets. We decided to assign one or more cards to every topic, depending on the variability of the statements within a topic. Ten of the topics are typically dealt with in single statements, such as manufacturer and expiry date. We decided to represent these topics by only one card. The remaining 24 topics were represented by two or three cards; we reasoned that this kind of information on topics like indications, instructions, and warnings would help the participants to see some structure and help them start sorting.

This added up to a total of 75 cards, to be found in Appendix 2 at the *Technical Communication* Web site. The cards contained simple sentences, but not so simple that they could not appear in actual leaflets. For instance, the following sentences were used to represent the topics *ingredients* and *dosage*, respectively:

Ingredients:

- The active substance of this medicine is Risperidon.
- This medicine contains liquid paraffin, microcrystalline, and monohydrate.

- Other ingredients of this medicine are maize flour and talc.

Dosage:

- The starting dose is usually 15 or 30 mg daily.
- Your doctor decides how much of this medicine you should take.
- When you are over 65 years of age, you should take only one tablet.

We tried to vary the wording of the cards within topics in order to discourage “shallow” sorting strategies based on surface characteristics. Furthermore, we kept the language and the syntax as simple as possible. No medicine name was used in order to prevent the use of prior knowledge on particular medications.

Procedure and Participants

The substantial number of cards and the fact that they contained sentences, not words or phrases, made it impossible to use digital applications currently available for card sorting, because the screen could not accommodate our stimuli. Hence we used paper cards and an empty table.

The participants were told that they would receive 75 cards with sentences from “medication instructions.” The size of the cards was about 3.5 inches by 2 inches and the typeface was Arial 14 point. The cards contained no more than three lines of text. They were shuffled for each new participant and handed over in a shoebox. The instruction for the first sorting phase was as follows:

Your task is to form groups of cards that belong together. You can make as many or few groups as you want. You can also change the groups during the task, by splitting them or joining them. You can also move a single card from one group to another.

The participants were told not to join the “singleton” cards, the cards not belonging to any group. When the participants were satisfied with their sorting, they were asked to label their groups with names, to be written on yellow stickers. Participants were requested to explain any unclear group names, but this was rarely necessary.

In the third phase, participants ordered their groups according to what they thought “should come first in

a medication instruction and what should come later.” Finally, participants filled out a short questionnaire on demographic variables and medication use.

The interviews were done by 13 students of our university, who were previously trained in card-sorting methodology and interviewing as part of an undergraduate course in communication studies. Seventy-eight participants performed the sorting task, 46 women and 32 men. Most participants were recruited in the networks of the interviewers. The mean age was 39 years ($SD = 17.9$). Thirty-nine percent of the participants had completed higher education, which is slightly more than the corresponding proportion in the Dutch population as a whole (35%). The large majority of the participants (97%) had Dutch as their mother tongue. All of them spoke Dutch fluently.

Of all participants, 26% had received no prescription medication in the past year, 51% had received one to three prescription medications, and 23% more than three. A majority (67%) said they read their patient information leaflets “usually” or “always,” and 21% read it “sometimes”; only 12% said they never read it. The mean sorting task duration was 30 minutes ($SD = 21.4$).

Analysis of the Sorting Data

Every group made by a participant was entered as a separate case. All cards were treated as two-valued variables (“belongs to group X” or “does not belong to group X”). The participants created a total of 693 groups and laid aside 112 singleton groups (i.e., unsorted cards). When ignoring singletons, the mean group size is 8.2 ($SD = 6.4$).

We first examined whether different groups of participants sorted the cards in different ways. The only reader factor affecting sorting behavior was reading experience. More experienced leaflet readers created more (and hence smaller) groups (Spearman's rank order correlation between reading experience and number of groups was .29, $p < .05$). This correlation is primarily due to the 12% of our readers who reported they never read leaflets: They formed a smaller number of (bigger) groups. Since the only reader characteristic influencing sorting behavior was reading experience and only the 12% nonreaders really differed from the other participants, the majority of our readers can be said

to be a homogeneous group. We decided to retain all participants in subsequent analyses.

Sorting data have been conventionally analyzed by means of a cluster analysis, which produces a visually attractive tree diagram where the cards that are viewed as most similar by the participants are placed on branches that are close together. Coherence between medication sentences is thus expressed in terms of distances in the diagram. In this way both local associations and higher level groupings become visible.

An alternative procedure is advocated by Capra (2005). This is a factor analysis that enables us to estimate how much of the variability in the data can be explained by common components. These components can be interpreted as the main categories in the card-sorting set distinguished by the participants. A factor analysis on sorting data offers three important advantages. First, it allows a straightforward estimate of the variance explained in the data by the adopted factor solution and of the homogeneity of the different factors. Second, it allows cards to load on different factors at the same time, thus revealing potential multidimensionality (i.e., the fact that cards show different kinds of similarities with other cards, so that a single card may fit into more than one category). Third, the factors can be used to identify specific groups produced by individual participants, closely resembling a hypothesized factor. The names the participants give to these groups may help to indicate their common denominator.

Global Results: Eleven Groups

Because of the extra information yielded by the factor analysis, we will start by reporting this analysis and then report the results of the cluster analysis. We performed a Principal Components analysis with Varimax Rotation. The first analysis yielded 16 factors with eigenvalues of over 1. As the eigenvalues dropped steeply after the 12th factor, a second analysis was run with 12 factors. In this analysis, the 12th factor was considerably weaker than the 11th, and contained only cards with higher loadings on other factors. Hence we settled for an 11-factor solution. We took a minimum loading of .4 as a requirement for assigning cards to factors.

Table 2 summarizes the results of this analysis. Note that the total number of cards exceeds 75 because some cards load on more than one factor. More details can be found in Appendix 3 at the *Technical Communication*

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Web site. In the 11-factor solution, the smallest group has 4 cards and the largest group has 13 cards. The fact that 66.7 % of the variability of the data is explained by the 11 factors indicates the degree of structure found in our sorting data.

How did we arrive at the names for our 11 groups? Why did we, for example, choose “Directions for use” as the best name for the first group? We used a three-step analytical procedure recommended by Capra (2005), who presented the Jaccard score as a useful measure in card-sorting studies.

In the first step, similarity indexes are computed between each actual group created by a participant on the one hand and the 11 factors on the other hand, with the Jaccard score as index. This score divides the number

of cards present in both groups (a) by this number (a) together with the number of cards present in the group made by the participant but absent in the factor (b) and the number of cards present in the factor but absent in the group (c): $a / a + b + c$. When a specific group is identical to a factor, the corresponding Jaccard score is 1, since b and c are zero for such a group.

In the second step, we selected the groups made by participants that most closely matched a given factor. For each factor, we chose the 20 highest scoring groups, with the restriction that the Jaccard score should be above .5. In the third step, we listed the names given to these groups by the participants and identified the best common denominator for them.

Table 2. Eigenvalues and variances explained by the 11 factors in the rotated 11-factor solution (Varimax Rotation)

	Provisional factor name	Nr. of cards	Eigenvalue	% of variance	Cumulative %
1	Directions for use	13	7.966	10.6	10.6
2	Do not use or take special care	12	7.062	9.4	20.0
3	Contact your doctor	11	5.638	7.5	27.6
4	Side effects	8	4.671	6.2	33.8
5	What the medicine is used for	5	4.358	5.8	39.6
6	Ingredients and medicine group	6	4.130	5.5	45.1
7	Storage	5	3.561	4.7	49.8
8	Packaging and appearance	4	3.537	4.7	54.6
9	Driving and using machines	6	3.165	4.2	58.8
10	Registration data	4	3.131	4.2	63.0
11	Pregnancy and breast feeding	6	2.772	3.7	66.7

Table 3. Jaccard scores and names for the 20 groups that best match the “directions for use” factor

Jaccard-score	Label (<i>Dutch</i>)	Label (<i>literal English translation</i>)
1.000	Inname en gebruik	Taking and using (the medicine)
.929	Gebruiksaanwijzing	Usage instructions
.867	Gebruik	Usage
.846	Wijze van innemen	How to take
.846	Gebruiksaanwijzing	Usage instructions
.786	Dosering	Dosage
.786	Gebruik	Using (the medicine)
.769	Gebruik	Using (the medicine)
.769	Dosering	Dosage
.769	Hoe moet je het middel gebruiken	How to use the medicine
.765	Gebruiksaanwijzing	Usage instructions
.750	Hoe gebruik je het	How do you use it
.750	Inname	Taking (the medicine)
.706	Gebruik/dosering	Using (the medicine)
.692	Hoe in te nemen	How to take it
.692	Regelmaat van innemen	Regularity of taking it
.688	Dosering	Dosage
.684	Gebruiksvoorschriften	Usage instructions
.667	Gebruik	Using (the medicine)
.667	Dosering en inname	Dosage and taking (the medicine)

As a demonstration, Table 3 lists the names for the 20 best matching groups for the first factor. Every line in this table gives the Jaccard score of one group made by a specific participant, plus the name the participant gave to this group of cards. The first line indicates that this group, with a maximum score of 1, perfectly reflects the factor that was the result of the statistical analysis. In the second line, a group is presented that probably has one or two cards more or that misses one or two cards of the factor. On the basis of these names, we selected the Dutch *gebruiksaanwijzing* (literally “usage instructions”) as the best label for this factor, which seems to translate best into “Directions for use.” This procedure was followed for all eleven factors, which resulted in the names presented in Table 2.

Exploring the Internal Structure of a Group

Combining the factor analysis with the cluster analysis allows us to analyze the lower order within group structure. By way of illustration, we will further explore the makeup of the directions for use group. Table 4 presents the cards that constitute the factor, together with their factor loadings. It shows that four cards have a

factor loading of .83 or higher. Card 64, with the lowest factor loading “do not stop suddenly,” can indeed be interpreted as less strongly connected to the daily use of the medicine, but on the other hand the decision to stop can be seen as an aspect of usage.

As mentioned, card sorting data can also be interpreted using a hierarchical cluster analysis. The entire cluster analysis tree is in Appendix 4 on the *Technical Communication* Web site. Figure 1 presents a selection of the results of this analysis, relevant for the first factor of the analysis discussed above. The key to the interpreting this diagram is looking at the points where branches join.

Two of the cards with the highest factor loadings in Table 4 (49 and 51) turn out to be the “best” pair in this diagram. Both refer to the time the medicine should be taken: “Take any time of day” and “Take before/after meal.” The majority of participants put these cards in the same group. Something we did not see in the factor analysis is the lower-order structure within a factor. For instance, the “best pair” is a subgroup with another fairly good pair of cards (50 and 61) with information about doses. On one higher level both these pairs form a group

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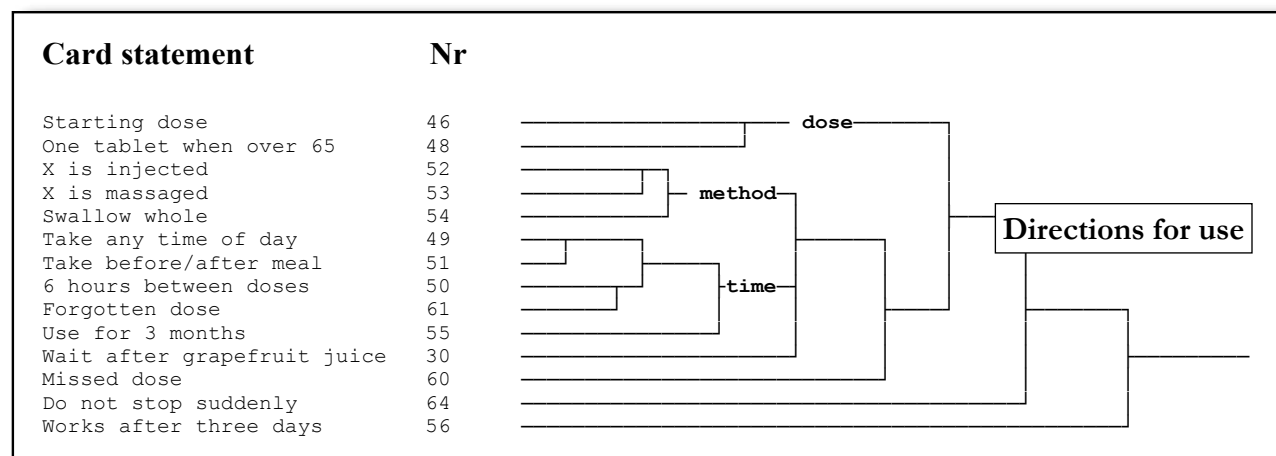


Figure 1. Cluster analysis for the first group, “Directions for use”

with cards about administering the drug (52 inject, 53 massage, 54 swallow); recall that the participants did not see these numbers while sorting. This group of seven cards seems to contain the “core” directions, all of them having loadings above .70 in the factor analysis. Cards with lower loadings are on the periphery of the sub tree in Figure 1, especially card 64.

Card 56 (“works after three days”) is the most eccentric one in the entire pack. The factor analysis does not place it in any factor, because it does not have any loadings of over .4. Its highest loading (.315) does place it in the vicinity of the directions group, however, as is shown by the sub-tree in Figure 1.

Grouping Complexities

Different Abstraction Levels A comparison between the factor analysis and the cluster analysis reveals that groupings may occur at different levels of abstraction. This can be demonstrated with the loadings of some cards in the “Driving and using machines” group. Two of these cards also load on the factor “Side effects”: “Do not drive when sleepy” (.732 and .359) and “Do not use machines when dizzy” (.665 and .316). This is something we also experienced in reader testing: Leaflet readers sometimes look for information on driving in the side effects section. In their cognitive structure,

Table 4. The cards assigned to the first factor (factor loadings are in parentheses)

Factor	Name of group	Cards (Factor loadings)	Short version card statement
1	Directions for use	30 (.75) 46 (.68) 48 (.67) 49 (.88) 50 (.87) 51 (.85) 52 (.73) 53 (.71) 54 (.83) 55 (.75) 60 (.71) 61 (.85) 64 (.53)	Wait after grapefruit juice Starting dose Take one tablet when over 65 Take any time of day Six hours between doses Take before/after meal Injected Massaged Swallow whole Use for 3 months Missed dose Forgotten dose Do not stop suddenly

“Driving and using machines” might be considered as a lower level unit within “Side effects.” The same goes for information about effects on breast feeding, which might be ordered within “Pregnancy” as well as within “Side effects.” This is demonstrated in the cluster analysis, as can be seen in Figure 2.

Figure 2 shows that the heading “Side effects” might be interpreted as giving information on different levels of specificity:

- Side effects 1 (SE1): The whole group of cards presented in Figure 2, including effects on pregnancy and breast feeding, effects on driving and using machines, interactions, and side effects.
- SE2: SE1 minus the pregnancy information.
- SE3: SE2 minus the driving and machines information; this gives us the side effects in a more strict sense (cards 65, 66, 67, 69) plus the interactions (27 and 28), plus 63.
- SE4: SE3 minus card 63 (“Stopping gives higher cholesterol”) which seems to be a singleton within this group. It can be considered as a side effect of stopping the medicine.
- SE5: SE4 minus the interactions gives us side effects in the strictest sense.

Medical and pharmaceutical experts will interpret the term *side effects* only in its strictest sense. They consider interactions to be conceptually different from

side effects, which can only be effects of the medicine itself. The dendrogram clearly shows that lay people have difficulties making this distinction; the interaction cards have loadings on the side effects group similar to the side effect of fatigue. And as we see in these data, effects on driving and breast feeding may also be considered to be side effects of the medicine.

User Situations or User Actions as Grouping

Criteria In the group “Directions for use,” all cards clearly belong to this group and do not load on other factors. But 12 other cards load on more than one factor, which suggests that they might be presented under different headings in the patient information leaflet. A good example is the group with cards about “Pregnancy and breast feeding.” Some of these cards also have high loadings on the group “Do not use or take special care” (31 – Do not use when pregnant (.643); 34 – Do not use when breast feeding (.617)). And card 32 (Tell doctor about child wish) also loaded on the factor “Tell your doctor” (.634). A closer look at such findings reveals a difference in the framing of information by the respondents. A card can be ordered in terms of user situations (e.g., “breast feeding”). But it may also be ordered in terms of the action that might be required (e.g., “stop using the medicine” or “talk to your doctor”).

The same distinction can be found in cards belonging to the group “Driving and using machines” and the group “Do not use or take special care.” For example, the card “You should not drive because

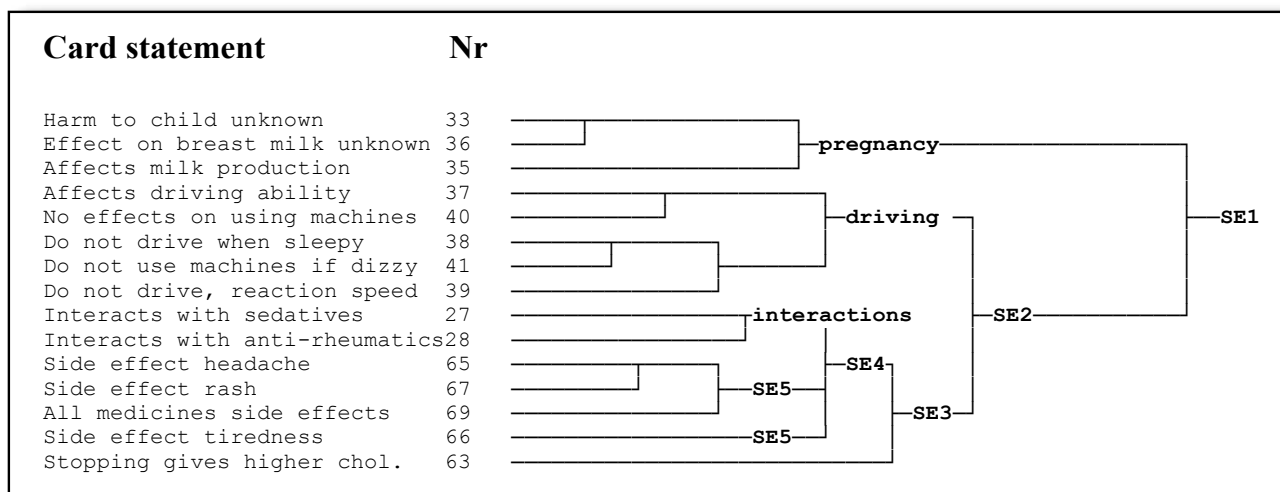


Figure 2. Cluster analysis of side effects (SE) cards

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this medicine affects your reaction speed” (39) has been grouped in terms of situations (loading .624 on “Driving”) as well as in terms of actions (loading .442 on “Do not use”). The fact that we did not see such multidimensionality in the group “Directions for use” can probably be explained by the fact that this group does not distinguish between user situations.

The most striking example of an action framing that overrides situational differences is the factor “Contact your doctor.” The cards in this group mention various topics about which the doctor could be consulted:

- conditions requiring special care
- using other medicines
- pregnancy
- using machines
- dosage
- duration of treatment
- overdose
- stopping treatment
- unlisted side effects
- changes in health

Both the situation-action multidimensionality and the abstraction-level dilemma affect the findability of information in patient information leaflets. Readers may look for information on breast feeding in a section called “Side effects,” but will not find it there according to the European template. This reflects abstraction differences between experts and patients.

Readers looking for information on pregnancy under the heading “Do not use or take special care” prefer the action framing over the situational framing of this topic. The template creates a special paragraph for pregnancy information, probably because it is considered as an important section that needs special attention. This raises the question of whether readers will keep on searching when they do not find the information under the preferred heading.

Ordering Task Results

There are many ways to analyze the ordering data. Although not every participant grouped the cards into the 11 factors discussed above, we decided to analyze the ordering of groups on the level of these factors, given

that the factors are the best approximation of grouping agreement we have. Our analytical procedure was as follows.

First, we calculated a so-called relative position for every group a participant made, excluding singleton cards. Consider a participant with five groups as an example. For this participant, there is a 5-point position scale. The relative position of a group refers to the proportion of groups (out of the five) preceding this group. Hence the first group always has position 0. The second group has position .20, the third .40, the fourth .60, and the last .80, because 80% of the participants’ groups precede this final group. For a participant with 10 groups, the second group would have .10 and the last .90.

This gave us a relative position for each card that was grouped. Since every card belongs to a factor, we can now take the mean of the relative positions for the cards belonging to each factor, and perform a one-way ANOVA in order to identify the relative position of every group. The results are presented in Table 5.

Table 5 is clear on the positions of the factors 5, 1, and 10; they differ significantly from all other factors. Hence readers expect patient information to start with information about the goal of the medicine. Then they expect to find directions for use. At the end of the document they will look for registration data.

There is also a clear “midfield” that is composed of two groups within which the factors do not differ reliably. The first midfield group is 2 (do not use or take special care), 4 (side effects), 3 (contact your doctor), and 8 (packaging and appearance). The second midfield group is 9 (driving and using machines), 7 (storage), and 11 (pregnancy and breast feeding). Most cards in these two groups differ from cards in the other group, the only exception being that 8 and 9 do not differ in mean position.

Somewhat unclear is the position of factor 6 (ingredients and medicine group). The relatively high standard deviation for the orderings of this factor indicates disagreement on how to place it. Hence we examined the individual orderings, focusing on how participants think about the first and last groups of information in patient information leaflets. For each factor and each participant, we calculated the mean relative position for its cards; then we counted the number of times a factor occupies either one of the first

Table 5. Mean relative positions for groups of cards belonging to the factors

Factor nr.	Nr. of cards	Nr. of observations	Factor name	Mean relative position (SD)	Differs sign. from (by Bonferroni's test):
5	5	383	What the medicine is used for	.16 (.20)	All others
1	13	983	Directions for use	.31 (.20)	All others
6	6	443	Ingredients and medicine group	.37 (.31)	All others except 2
2	12	679	Do not use or take special care	.42 (.22)	All others except 6, 4, 3, and 8
4	8	517	Side effects	.43 (.22)	All others except 2, 3, and 8
3	11	690	Contact your doctor	.45 (.24)	All others except 4, 2, and 8
8	4	300	Packaging and appearance	.45 (.32)	All others except 2, 4, 3, and 9
9	6	452	Driving and using machines	.50 (.23)	All others except 8, 7, and 11
7	5	360	Storage	.52 (.30)	All others except 9 and 11
11	6	450	Pregnancy and breast feeding	.53 (.23)	All others except 9 and 7
10	4	271	Registration data	.62 (.36)	All others

three or one of the last three places (see Table 6). Of course, this procedure only approximates the individual orderings, since not every participant produced the same groupings.

In Table 6, the last two columns present the number of participants positioning every factor in the beginning or at the end of the document. For instance, for 33 of our participants factor 6 was among first three factors, and for 26 participants it was among the last three. For the remaining participants, it was somewhere in between (not represented in the table).

We can see that two factors were never positioned at the end of the document and clearly seem to have a prominent position at the start: the goal of the medicine and the directions for use. We can also see that the final position of the registration data is less clear than Figure 2 suggests. Some readers place this group of cards at the beginning of the document. The same goes for information about ingredients, packaging, and storage.

Table 6. The factors' mean ranks within participants for the first and the last three places

Factor nr.	Factor name	Total 1-3	Total 9-11
5	What the medicine is used for	58	0
1	Directions for use	36	0
6	Ingredients and medicine group	33	26
2	Do not use or take special care	20	14
4	Side effects	12	9
3	Contact your doctor	13	15
8	Packaging and appearance	31	35
9	Driving and using machines	5	26
7	Storage	14	32
11	Pregnancy and breast feeding	4	31
10	Registration data	27	47

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Table 7. Mean relative positions for medicine information groups

Factor nr.	Nr. of cards	Nr. of observations	Factor name	Mean relative position (SD)	Differs sign. from (by Bonferroni's test):
5	5	383	What the medicine is used for	.16 (.20)	All others
6	6	443	Ingredients and medicine group	.37 (.31)	All others
8	4	300	Packaging and appearance	.45 (.32)	All others
7	5	360	Storage	.52 (.30)	All others
10	4	271	Registration data	.62 (.36)	All others

Table 8. Mean relative positions for usage information groups

Factor nr.	Nr. of cards	Nr. of observations	Factor name	Mean relative position (SD)	Differs sign. from (by Bonferroni's test):
1	13	983	Directions for use	.31 (.20)	All others
2	12	679	Do not use or take special care	.42 (.22)	All others except 4 and 3
4	8	517	Side effects	.43 (.22)	All others except 2 and 3
3	11	690	Contact your doctor	.45 (.24)	All others except 2 and 4
9	6	452	Driving and using machines	.50 (.23)	All others except 11
11	6	450	Pregnancy and breast feeding	.53 (.23)	All others except 9

Can we derive a preferred order from these data? We think we can, provided that we separate medicine information from usage information. Tables 7 and 8 again present the mean relative position analysis from Figure 2, but separately for medicine and usage information.

Information about the drug has a clearly preferred order, because all factor positions differ from each other. Drug information should start with the goal of the medicine, followed by ingredients, packaging and storage, and finally registration data.

For the usage information, three groups must be distinguished. Clearly it starts with directions for use. Then a group of more or less general problems follows, with information about special user situations, side effects, and situations in which patients should contact their doctor. Within this group, presentation order is unclear. Finally we find a group with more specific user situations concerning driving, using machines, pregnancy, and breast feeding, also without clear ordering preferences.

In the next section we will further discuss the template design implications of our card-sorting study.

Proposal for Grouping and Ordering Leaflet Information

What are the implications of this card-sorting study for the design of a template for patient information leaflets? Let us first list the results from the study. First, the factor analysis strongly suggests 11 groups of information; the cluster analysis suggests they can be divided into two subgroups: medicine and usage information:

Medicine information

What the medicine is used for
Ingredients and medicine group
Packaging and appearance
Storage
Registration data

Usage information

Directions for use
Do not use or take special care
Side effects
Contact your doctor
Driving and using machines
Pregnancy and breast feeding

How to join these two types of information in a single structure? The picture emerging from the ordering analysis is the following. Some subtopics of medicine information seem to be preferred at the end (storage and registration data), while the goal of the medicine clearly is preferred at the beginning. The usage information is mostly placed somewhere in the midfield and can be ordered in three clusters: directions, precautions and side effects, driving and pregnancy (Table 8). All this gives a structure as presented in Table 9.

We note that this structure is strikingly similar to the one arrived at by Morrow et al. (1996, 2000). In their results, a “medication and how to take it” group preceded a “problems” group. Within the first group, the order was *name – purpose – dose – schedule – duration*; within the second group, it was *warnings – mild side effects – severe side effects – emergency*.

Table 9. The proposed leaflet structure

Category	Factor nr.	Name
Medicine—goal and ingredients	5	What the medicine is used for
	6	Ingredients and medicine group
Usage—directions	1	Directions for use
Usage—potential problems	2	Do not use or take special care
	4	Side effects
	9	Driving and using machines
	11	Pregnancy and breast feeding
Medicine—other aspects	8	Packaging and appearance
	7	Storage
	10	Registration data

This proposal largely follows from the results presented in Tables 7 and 8, but two issues need elaboration.

- Why has the medicine information been split at the point between factor 6 (Ingredients) and factor 8 (Packaging)?
- Why do we not mention a section “Contact your doctor”?

The division of the section on medicine information is based on the results of the cluster analysis. Figure 3 presents the relevant part of the cluster analysis tree.

The first part of the dendrogram shows three topics: goal of the medicine, ingredients, and medication group. These three topics are related to each other. Then three other topics are presented in the lower part of the dendrogram: manufacturer and registration, packaging, and storage. The main split between these groups is between cards 9 and 16. Thus, if part of the information about the medicine has to be presented as an introduction, it makes sense to tell the readers about the goal of the medicine, the medication group, and the ingredients.

Information on storage of the medicine was clearly positioned at the end of the document, according to the results presented in Table 7. And the dendrogram shows this topic to be related to packaging and registration. Thus, it makes sense to reserve the final position for packaging, storage, and registration.

Concerning the position of the group “Contact your doctor,” there are several options.

- We might choose to ignore this factor because it introduces multidimensionality in the leaflet’s structure. However, multidimensionality and redundancy are not by themselves problematic in instructive text.
- When accepting a separate section “Contact your doctor,” several positions could be considered. First, we could use the information as a kind of summary of the problem section, indicating the more serious problems that necessitate action. This summary could be placed either at the beginning or at the end of the “usage problems” section. Second, we could place the information group at the start of the leaflet, as a headline section for the entire leaflet (Dolk, Lentz, Knapp, Pander Maat, & Raynor, 2011).

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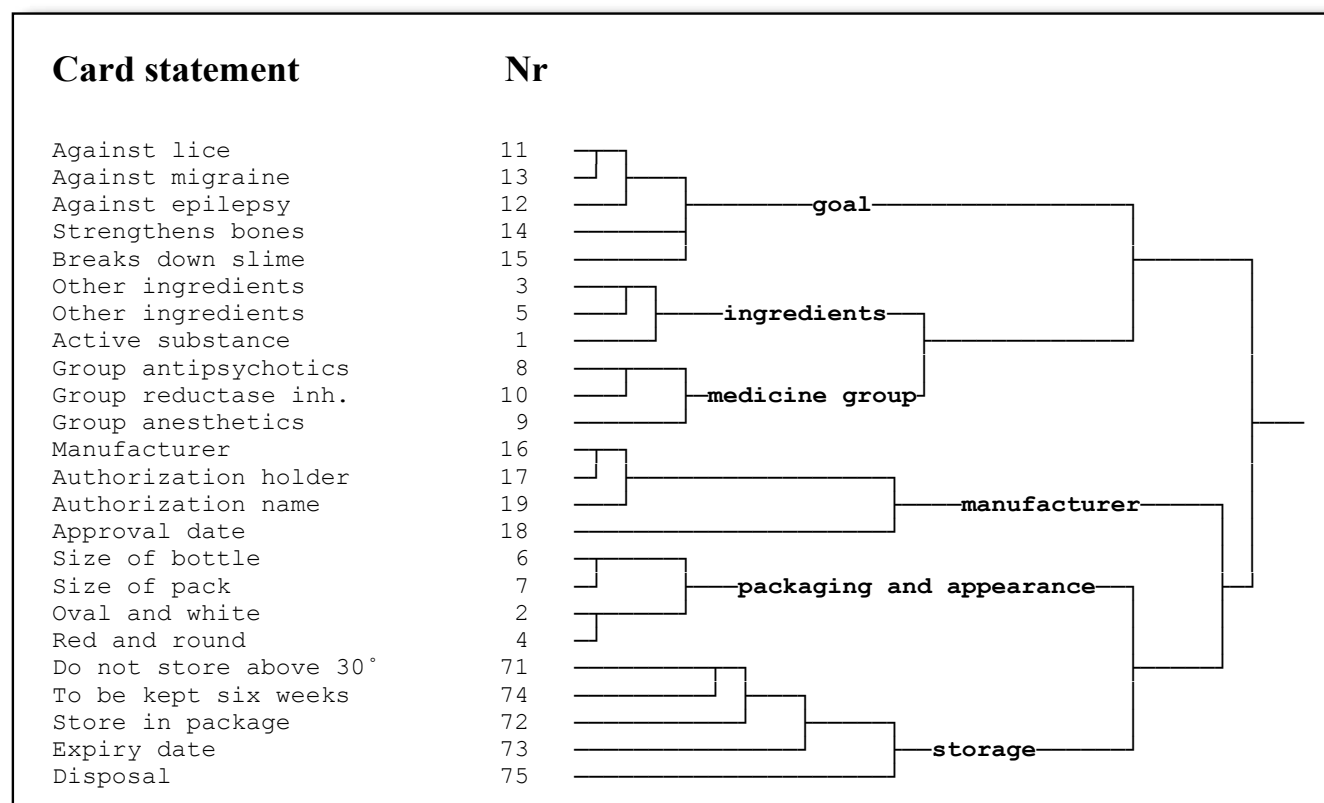


Figure 3. Cluster analysis for the section on medicine information

- We doubt that patients will ever search for a section describing all situations with a need for doctor contact. Generally, a patient will search for information with a specific situation in mind. If contact with a doctor is needed in that situation, this advice should be presented clearly in the section on that topic. Perhaps it should also be highlighted in some way, for instance by adding a telephone pictogram. According to this line of reasoning, a special “Contact your doctor” section would not be necessary.

Since the issue of the “Contact your doctor” section is still unresolved, we will not include such a section in our proposal.

How does our proposal so far relate to the current EU template? Table 10 presents a comparison of our empirically based proposal with the present EU template.

In proposing an alternative structure for patient information leaflets, we should make a distinction between three aspects of document structure: the

grouping of related topics in sections, the order of presentation of sections, and the wording of headings for every section.

What are the main differences between the current EU template and our proposal in terms of grouping related topics in sections? There are two major and some minor differences. Major differences are the following:

- The “Before you take X” section is now part of a larger “Potential problems” section, which also includes side effects.
- Side effects in a broad sense also include interactions with other medicines. This is not to say that this group should be labeled “Side effects.” But the side effects in a strict sense and the interactions should at least be placed next to each other in the new structure.

There are also some smaller regrouping modifications.

Table 10. Our proposal compared with the EU template

New section	Corresponding EU template sections	Present proposal
Medicine—goal and ingredients	1. What is X and what is it used for?	What the medicine is used for
	6. Further information: What X contains	Ingredients and medicine group
Usage—directions	3. How to take X	Directions for use
Usage—potential problems	2. Before you take X: Do not take X Take special care with X Taking X with food and drink	Do not use or take special care
	4. Possible side effects	Side effects
	2. Before you take X: taking other medicines	
	2. Before you take X: driving and using machines	Driving and using machines
	2. Before you take X: pregnancy and breast feeding	Pregnancy and breast feeding
Medicine—other aspects	6. Further information: What X looks like and contents of the pack	Packaging and appearance
	5. How to store X	Storage
	6. Further information: Marketing authorization holder and manufacturer This leaflet was last approved in (date)	Registration data

- The old “Taking X with food and drink” category covers two kinds of information, which are differently placed in the sorting data. The topic “Medicine combined with alcohol” is in the “Before you take X” category (now called “Do not use or take special care”). The topic “Medicine combined with grapefruit juice” is grouped in “How to take X” information (now called “Directions for use”), which makes sense because it tells the reader to wait half an hour before taking the medicine.
- All information about ingredients (cards 1, 3, and 5) has been put together in the card-sorting data, so our participants did not make the distinction between the active ingredient (to be given in section 1) and the other ingredients (section 6). All ingredient cards are coupled with the medicine group cards. And since the medicine group information is placed at the beginning, in principle the ingredients are better placed in the beginning too.

With regard to the order of presentation, there are four differences between our proposal and the current template:

- Since the medicine group information has been placed at the beginning, the closely related ingredients section has moved from the end to the start of the document.
- The section with precautions “Do not use or take special care” has moved to a further position in the document after the directions for use.
- Information about pregnancy and using machines has also been positioned further on, after the side effects.
- Information about storage is now placed after the information on packaging and appearance.

Finally, our closed sorting study has yielded interesting information regarding the wording of our headings. One conclusion was that general headings like “Before you take X” and “Further information” should be avoided because they do not indicate any topic.

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A second conclusion was that some specific concepts in headings, such as “Side effects” and “Machines,” need careful consideration because pharmacists and lay readers may differ in their interpretations of them: Medicine effects on breast feeding may be considered as side effects, and everyday utensils may not be regarded as machines that should be avoided while taking medication. However, since wording decisions can only be made once grouping decisions have been made, we will not provide wording proposals here. These should be tested in another closed sorting study.

Conclusions

Our closed card-sorting method showed that readers had some problems in locating the correct answers to a set of 27 questions. These problems were the result of two kinds of mismatches between reader expectations and the current EU template. The first mismatch is between the wording of headings and reader interpretations. The second mismatch has to do with classifying and grouping information. These mismatches confirm the results of other studies in which readers experience difficulties in finding information in PILs.

In the open card-sorting study, we identified 11 sections that readers may expect when confronted with patient information about medicines. We found some important discrepancies between the current template and the results of the empirical data analysis. To our surprise, the participants grouped different cards in one factor named “Contact your doctor,” which may indicate that readers would like a (sub)section discussing all situations in which they should consult a physician. These situations might be combined in a so-called headline section, as has been proposed by the UK Medicines and Healthcare products Regulatory Agency (MHRA, 2005). Another option is a “Contact your doctor” summary within a section on potential problems of medicine use. A final option is to illustrate all “Contact your doctor” sentences with a pictogram instead of clustering this advice in one section. Further research is needed to investigate the effect of a separate “Contact your doctor” section.

We identified two main topic groups: information about the medicine and information about its use. Medicine information was preferred by some at the start

and by others at the end of the document: Information about the purpose of the medicine clearly should be presented in a first paragraph, while registration data clearly belong at the end of the document. Usage information (instructions and warnings) was located in the center of the leaflet, starting with the directions for use. In terms of presentation order, this would mean a swap between the current warnings in “Before you take X” and the “How to take X” section. As in the first study, we found that participants do not differentiate between active ingredients and other ingredients. Findability of patient information would improve if all ingredients were presented in one section, immediately after the first section on the goal of the medicine.

Further investigation is needed on the relation among three sections in the current template: “Side effects,” “Driving and machines,” and “Pregnancy and breast feeding.” These sections clearly belong together, but they can be related in several ways. Should they be presented next to each other, or should “Driving and machines” and “Pregnancy and breast feeding” be subsections of the “Side effects” section?

From a methodological perspective, this study clearly shows that card sorting helps to investigate readers’ mental representations and to formulate hypotheses about readers’ genre expectations when confronted with PILs. The proposal we presented in Table 9 can be seen as a set of hypotheses about the locations where readers will start looking for specific information. Likewise, we predict that PILs presented in this alternative format will result in shorter localization times for patients who are asked to answer specific questions about the medicine and its use.

Both the dendrogram and the factor analysis help us to understand how different topics of this genre relate to each other and to see the multidimensionality of specific (sub)topics. The procedure advocated by Capra (2005) proved to be extremely helpful in analyzing a complex dataset. Note that this dataset consisted of 693 individual groups, produced by 78 participants sorting 75 different cards. With this three-step analytical procedure, we were able to identify sets of groups that most closely matched the results of the factor analysis and relate these groups with group names given by participants.

Further research is needed to show whether a design according to our proposal actually improves the

findability of patient information in PILs. Such a test should concentrate not only on the grouping of topics and the presentation order, but also on the wording of headings. The first study has demonstrated that this can be done by using a manipulated leaflet in which only the headings are readable, which enhances ecological validity.

Decisions on a new version of the EU template should not be legalized without careful research into the effectiveness of such a proposal. The most important conclusion that can be drawn from both studies presented in this paper is that it is certainly possible to base a new template design on usability data. This study shows how sorting data may be used—and in fact seem to be indispensable—to select promising text structures from the infinite number of conceivable structures. The next step would be an experimental test of the most promising candidates.

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The Web Portfolios of Independent Technical Communicators . . . and the Documents of Their Clients

John B. Killoran

Abstract

Purpose: This empirical study examines whether independent technical communicators' Web portfolios are worthwhile and how technical communicators manage to post work for clients on their own Web sites.

Method: The study surveyed 240 independent contractors, consultants, and principals of small businesses that maintain Web sites to market their technical communication services, briefly interviewed half of them, and analyzed posted samples of their work.

Results: Results reveal the extent to which posted work samples are useful in marketing technical communication services, and how the numbers of such samples are associated with their overall usefulness. Results also reveal how independent technical communicators overcome such challenges as clients' concerns about proprietary information, confidentiality, and intellectual property in order to post their work.

Conclusion: These results carry implications not only for how independent technical communicators disseminate a portfolio of their work but also for how any technical communicators would develop portfolios of their work for employment, academic credentials, or professional certification.

Keywords: independent contractors and consultants, intellectual property, portfolios, Web sites

Practitioner's Takeaway

- Technical communicators should be aware of the intellectual property conditions that can influence how they may legally, ethically, and practically disseminate portfolios of their work.
- Independent technical communicators can market their services more effectively by posting a portfolio of their work on their business Web site.
- To overcome intellectual property conditions that hinder them from posting their work on the Web, technical communicators can seek to elicit their clients' consent, carefully select or modify the work itself, and demonstrate their discretion to prospective clients.

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Digital Portfolios

Digital portfolios, in their progress toward widespread adoption, have reached a milestone of sorts, having been the subject of several user-oriented books from both academic and mass market publishers (Baron, 2004; Claywell, 2001; DiMarco, 2006; Kimball, 2003; Reynolds & Rice, 2006). But whereas educational uses of digital portfolios have received considerable impetus from academics, including their use for students transitioning from college to the workforce, somewhat less has been heard about actual digital portfolio use among practitioners in the workforce itself.

Within the field of technical communication specifically, digital portfolios have been discussed occasionally but encouragingly in such venues as STC conferences and STC's *Intercom*. There, practitioners and educators have encouraged technical communicators on the job market to develop portfolios (e.g., Scott, 2000; Smith, 2002; St. Amant, 2002), and several have encouraged technical communicators to post their portfolios on the Web (Barry & Wesolowski, 2001; Frick, 2002, 2003; Hunt, 1996; Kendus, 2002; Kimball, 2003; Smith, 2003).

Apart from the advantages that Web portfolios offer to practitioners in any field—they cost relatively little to construct and publish, are easy to maintain and update, reach geographically diverse audiences, and enable timely and convenient access for those audiences—they are especially suitable for showcasing the verbal, visual, and multimedia work in which technical communicators specialize, as well as the technical skills to create such work (Barry & Wesolowski, 2001; Kendus, 2002; Kimball, 2003). Anecdotal evidence is emerging that employers, particularly those in industries invested in digital communication, are using the Web to seek out information about prospective employees (Finder, 2006).

As useful as Web portfolios might be for technical communication employees and aspiring employees, they might be even more so for technical communication independent contractors and consultants. Unlike regular employees, such independent practitioners must continuously be on the market for their next client and so would have a continuous need for a Web portfolio. DiMarco recommended a Web portfolio for independent practitioners in any information-intensive field (2006, p. 10), in part because of the personal

connection it can establish in an often-impersonal business environment (p. 20). A Web portfolio could occupy the heart of an independent's small business Web site, and technical communication practitioners have recommended that their independent colleagues maintain such a site for the convenience and credibility it offers (Frick, 2002) and for its utility in enhancing their networking activities (Broach, Gallagher, & Lockwood, 2006).

Though this literature about Web portfolios is quite upbeat, little empirical evidence has yet emerged to confirm their efficacy for technical communicators in particular. Barry and Wesolowski (2001) surveyed 35 technical communicators about Web portfolios, but as their purpose was to develop a style guide, they did not inquire into the portfolios' efficacy. They characterized their inquiry as preliminary and called for further research. Empirical studies across occupational fields offer somewhat promising evidence of digital portfolios' efficacy (Killoran, 2011; Ward & Moser, 2008), but as employment practices in each field can be quite distinct, it is unclear how such general studies would bear upon the field of technical communication specifically.

Without more direct evidence, technical communication practitioners might be wary of developing a Web portfolio, for at least a couple of reasons. First, before practitioners can reap any return on a Web portfolio, they must first invest the time, labor, and expense to construct, maintain, and promote a Web site, a considerable disincentive. Second, even if Web portfolios are shown to be worthwhile, technical communicators may have relatively little work that they can post openly on the Web. Unlike much of the portfolio work created by students or by creative workers in the arts, the work of technical communication practitioners is typically controlled by their employers or clients. Often employed by leading-edge industries to document advanced technologies, technical communicators must frequently operate under nondisclosure agreements to protect their employers' or clients' proprietary and confidential information. Even when they do not, copyright over their work for hire would fall to their employers or would often be assigned to their clients. And even when not so restricted by their employers or clients, technical communicators might want to avoid the appearance of indiscretion that posted work samples might create with the intended audiences

of a Web portfolio—future employers or prospective clients—who may be anticipating their own proprietary, confidentiality, and copyright concerns.

This study addresses both of these challenges. It focuses in particular on the Web portfolios of technical communication independent contractors, consultants, and principals of small businesses (hereafter *independent technical communicators* or *independent practitioners*), who, as mentioned above, have the most at stake in Web portfolios' potential. Independent practitioners constitute a sizable portion of the technical communication profession—roughly one quarter of STC's membership (STC, 2004), for instance—a proportion that has probably not diminished over the past decade of outsourcing, offshoring, and economic constraints on full-time employment. Their prospects for remaining employed in the field depend on how successfully they market their technical communication services, and Web portfolios might play a significant role in such marketing.

In response to the first challenge—an ongoing lack of empirical evidence demonstrating the efficacy of Web portfolios—this study aims to answer the following research question:

- Is it worthwhile for independent technical communicators to post samples of their work for clients on their own Web site?

Even if this first question is answered affirmatively, independent practitioners face the second challenge of marshaling samples of work they can safely post, a situation that prompts the second research question:

- How do independent technical communicators manage to safely post work for clients on their own Web site?

To address this second question in particular, this article will need to refer to the legal entanglements that affect how technical communicators disseminate their work, or do not. These entanglements are many:

- The U.S. Constitution's intellectual property clause and the First Amendment's protection of free speech (Herrington, 2011)
- Various national laws, such as the work for hire doctrine in the U.S. Copyright Act of 1976

(Herrington, 1999b), the fair use doctrine in the same Act (Herrington, 2011), U.S. agency-partnership law (Herrington, 1999a), and a set of 1997–98 laws including the No Electronic Theft (NET) Act, the Digital Millennium Copyright Act, and the Sonny Bono Copyright Extension Act (Logie, 2005)

- Differences among various nations' laws for work disseminated internationally, and international agreements, such as the Berne Convention for the Protection of Literary and Artistic Works and the Trade Related Aspects of Intellectual Property Rights agreement (Herrington, 2010; McKee & Porter, 2010)
- Trademarks, patents, contracts, nondisclosure agreements, right of privacy, rights of publicity, fair use, labor law, works for hire, permissions, licenses, license agreements, waivers, releases, defamation, and moral rights (Helyar & Doudnikoff, 1994/2003)
- Case law and legal precedents (Herrington, 1999b)
- Litigation and threats of litigation (Porter, 2005)

For the sake of conciseness, this article will refer collectively to such legal entanglements as problems of intellectual property (IP), as their proliferation in recent years seems to be driven by struggles to control the “property” inherent in IP, especially digital property.

In this article, I first review how these IP entanglements can affect how technical communicators disseminate their work through digital media. Then I describe how I surveyed and interviewed a large sample of independent practitioners who maintained business Web sites to market their technical communication services, and how I analyzed the samples of work posted on their sites. In response to the first research question, the survey together with the Web site analysis will reveal the extent to which participants found posted samples of their work to be useful, and how the numbers of such samples are associated with their usefulness. In response to the second research question, the interviews as well as the Web site analysis will reveal how participants tried to overcome IP problems to post their work. The article closes by discussing the implications of these results not only for independent technical communicators themselves but also for any technical communicators

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assembling portfolios for employment, academic credentials, or professional certification.

Intellectual Property and Technical Communication in Digital Media

Digital media are widely recognized to have increased the public's opportunities to access and publish IP, but in so doing, they have also raised the stakes in potential IP disputes. In response, new IP laws, policies, and practices have been emerging and have been seen as reducing the public's recently won opportunities. This apparent rollback of opportunity may account for the urgency with which IP has been treated by scholars across various fields, such as law professors Lawrence Lessig (2001, 2004, 2008) and Jessica Litman (2006), and media scholar Siva Vaidhyanathan (2001, 2004). These three have argued that powerful commercial interests are constraining the freedom of action of cultural creators and consumers. In the same vein, technical communication scholarship has warned about the perils that IP laws, policies, and practices pose for the freedom of action of technical communication practitioners in particular, as well as teachers, researchers, and the public in general, especially from corporate interests (Gurak, 1997; Herrington, 2010, 2011; Howard, 1996; Logie, 2005; McKee & Porter, 2010; Porter, 2005).

In contrast with a tendency in such IP scholarship to side with ordinary individuals and the public against corporations and governments, some scholarship has seemed to side somewhat more with employers, stressing that technical communication employees should exercise their rights responsibly. For instance, Smith Diaz (2007) described why and how technical communicators should preserve the IP rights of their employers beyond U.S. borders by carefully maintaining documentation and observing confidentiality. Rife (2007), citing several cases of employees fired because of their online postings, advised technical communicators that the unfettered liberties expected in such Web venues as blogs are not as unfettered as they might have thought when weighed against employers' legitimate concerns for their organization's reputation, privacy, and security of proprietary information. Rife argued that technical communicators should share these concerns and restrict their online writing's range of purposes, topics, and language.

In an empirical study of copyright law's potential chilling effect on Internet discourse, Rife's (2010) survey of technical communication students, teachers, and practitioners failed to find evidence of a chill as severe as the literature would have envisaged. Nevertheless, results of individual survey questions revealed some degree of chill in certain Web composing activities. For instance, more than half of her respondents felt that some of their Web material was constrained because they could not incorporate others' material into it. Almost half affirmed that, because of copyright concerns, they had not posted certain material to the Web in the first place. Almost one fifth affirmed that, for similar reasons, they had subsequently removed material they had previously posted to the Web even though they had received no request to do so. Notwithstanding Rife's serene overall conclusions, such results indicate that, for some Web composition activities, concerns about copyright liability are indeed chilling technical communicators' communication.

However, counterbalancing and in some cases overriding technical communicators' concerns with copyright liability were the imperatives of their employers, their own consciences, their critical attitudes toward copyright law, their assessments of the low risk of being caught, and, if caught, their expectations of negligible consequences (Rife, 2010). Rife also reported how some who actually observed copyright law did so in a backhanded way by disguising their use of copyrighted material so that their transgressions would remain undetected (p. 56). In documenting these countervailing attitudes and practices, Rife's study is among the few in the literature to report how technical communicators, faced with potential IP problems, persist rather than back off. At several points, Rife called for further research on these kinds of issues and activities, a call that I respond to here. She concluded that technical communicators were "inadequately educated . . . on how to exploit their own intellectual creations *for profit*" (p. 63; italics in original), a condition that, in part, spurs my study into the practices of independent practitioners who are maintaining business Web sites in attempts to profit from their technical communication services.

Technical Communication Creators vs. Corporations vs. Consumers

The IP literature all but ignores the plight of independent practitioners who attempt to post their own work to the Web, as distinct from accessing or posting someone else's. Indeed, against the typically corporate copyright holders of digital work, the IP literature focuses largely on the plight of would-be consumers of such work, not on its creators. However, all work obviously has creators, and their attempts to control the dissemination of the IP they created deserve attention. Their position and capacity in the struggle over IP should not be conflated with those of the other IP stakeholders, for legal, ethical, and practical reasons.

First, as Herrington (1999b) has explained, the work of creators who maintain a status as independent practitioners, as distinct from employees, is treated differently under the Work for Hire statute in U.S. copyright law. Whereas work created by employees is deemed to have been created by the employer, work commissioned from nonemployees, such as independent contractors and consultants, tends to remain under their own authorship, even though a client would be paying for the work. Indeed, in contrast with the dystopian visions of increasing corporate control over IP promulgated in some IP literature, Herrington observed a trend in legal cases to increasingly recognize the copyright claims of independent creators over those of organizations that contracted their work. Thus, the onus would be on prospective clients, when negotiating with independent practitioners, to request that copyright be assigned to them, that nondisclosure agreements be signed, and that other IP terms and conditions be recognized.

Second, in contrast with the consumers who, in the IP literature, typically seek to access or use someone else's work—appropriations that, to some, may seem parasitical—cultural creators would seem to have a greater ethical claim to what they labored to create. Likewise, they may seem to have a greater ethical claim than do corporations that purchased the copyright over their works, such as the clients who commission them. For instance, some countries recognize creators' moral rights over their creations (Helyar & Doudnikoff, 1994/2003, p. 500; Herrington, 2010; McKee & Porter, 2010). Depriving a creator of the evidence of her skills and accomplishments for display within her portfolio

could constrain her livelihood—not an easily dismissed ethical dilemma.

Third, in the typical IP situation, the stakeholder with the greatest capacity to exercise creative control over the work is obviously its original creator; corporate clients and consumers become involved usually because they lack the skills and resources to create a comparable work of their own. Indeed, the creator is also probably more familiar with the final product than her corporate client who may hold the copyright to it, having herself gone through the experience of writing, editing, and/or designing it. The creator probably retains digital copies of the work, as well as the software and other resources used to create it—software that could easily be reopened to create an excerpt, to disguise the client's name and other identifying information, or to revive an earlier draft. If such adaptations of the client's final product were posted to a Web portfolio, would the client even notice?

For these legal, ethical, and practical reasons, independent practitioners would seem to retain a much greater authorial license over the IP they create than do the consumers who are typically the focus of IP literature or, indeed, the corporate clients who contract such IP. However, in practice, independent practitioners may seldom be able to exercise that license to display much of their work on their own Web site, for a corresponding set of legal, ethical, and practical reasons.

First, technical communicators are specialists in writing, editing, and/or design but typically not in law. Rife's (2010) study demonstrated the degree to which technical communicators misunderstand or are ignorant of copyright law. To preclude IP entanglements, technical communicators have been advised to seek out legal counsel (Glick-Smith & Stephenson, 1998, pp. 90–91; Helyar & Doudnikoff, 1994/2003, p. 501). By contrast, technical communicators' corporate clients are more likely to already have legal counsel, as well as legal policies, legal experience, and the financial resources to prevail in legal disputes. They would typically seek to preclude legal entanglements by imposing contracts that explicitly spell out how the contracted work may or may not be disseminated. Indeed, Herrington (1999b) recommended that technical communicators themselves avoid legal entanglements by negotiating such contracts. Clients paying for work would likely insist on terms and conditions covering copyright, nondisclosure agreements, and other IP issues that serve their own

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organizational needs, not those of the independent practitioner.

Second, regardless of their clients' consent that freed independent practitioners to post their clients' work to their Web portfolios, practitioners may have to impress upon prospective clients that they maintained ethical practices in obtaining that work. Technical communication work often involves documenting new IP itself, and many practitioners specialize in leading-edge industries that generate lots of new IP. Prospective clients in those industries might have their own IP concerns in mind as they evaluate independent practitioners and would note a practitioner's apparent liberties with her clients' IP. Accordingly, independent practitioners would have to maintain the appearance, if not the reality, of high ethical standards, and they may therefore conclude that the best skill to display on their Web site would be discretion.

Third, for practical reasons, the kinds of alleged IP transgressions debated in the IP literature are often never actually disputed outside the literature because the parties involved are ignorant of the alleged transgressions and indeed of each other—say, a student using a graphic found on the Web unbeknownst to the graphic's copyright holder. By contrast, an independent practitioner and her client are already united in a relationship based largely on the work whose dissemination could potentially be at the heart of an IP dispute between them. The independent practitioner might wish not to jeopardize that relationship with a client from whom she might get repeat business or referrals. Many organizations monitor their Web reputation by regularly conducting searches on keywords matching their brand names, trademarks, and other identifying information—searches that would easily unearth the kinds of terminologically dense work in which technical communicators specialize. A Web portfolio would be a very exposed forum in which to take liberties with a client's work, and accordingly independent technical communicators may avoid even attempting to do so.

Thus, for these legal, ethical, and practical reasons—collectively, rhetorical reasons—independent practitioners, with whatever authorial license they may have over their work, may seldom be able to display it on their own Web sites. To recognize more clearly in rhetorical terms the challenges independent

practitioners face, it will be useful to briefly analyze the typical provenance of posted samples of work through the familiar rhetorical triangle of author, text, and audience. If, through this analytical triangle, we view both work originally delivered to clients and such work subsequently exhibited on independent practitioners' Web sites, we can see how such work would need to shift between two somewhat distinct triangles:

- Authorship, which is frequently assigned to clients under the guise of copyright, nondisclosure agreements, and other IP terms and conditions, must be transferred at least informally back to practitioners in order that the work be republished under their own byline on their own Web site.
- Text, created for clients' specialized purposes, might have to be recast to showcase not only practitioners' technical communication skills but also their compliance with clients' proprietary and confidentiality concerns and their own discretion.
- Audience, originally clients and their stakeholders, would obviously be expanded to include prospective clients whose vicarious IP concerns may have to be appeased once the work is posted on practitioners' Web sites.

Hence, to post on their own Web site work originally done for clients would in principle require independent practitioners to intervene with these three rhetorical stakeholders to effect the shift. It is the challenge inherent in this intervention that prompts this study's second research question about how independent technical communicators manage to post samples of their work for clients on their own Web sites. We will return to this rhetorical triangle below where this study presents its findings in response to this question.

Methods

This study adopted a mixed methods approach that included a survey, interviews, and Web site analysis. Surveys are commonly used to research workplace writing in general (Anderson, 1985a, 1985b) and independent technical communicators' marketing practices in particular (STC, 2004; STC Consulting and Independent Contracting SIG, 2005). However,

survey questionnaires inevitably constrain the kinds of information respondents can offer (Anderson, 1985b, p. 494), and so to complement the survey responses, willing respondents were asked open-ended questions in brief follow-up interviews, a dual method applied in other studies of technical communicators (Conklin, 2007; Dayton, 2004; Rife, 2010). Content analyses in varying degrees of methodological purity have frequently been used to explore large samples of individuals' Web sites (Döring, 2002) and organizational Web sites (McMillan, 2000; Thayer, Evans, McBride, Queen, & Spyridakis, 2007). As many technical communication business sites share elements of these two—in many cases representing one individual but representing him or her as a corporate entity—this study's large sample of Web sites was similarly subjected to systematic analysis.

Using search engines and a variety of other sources (described in Killoran, 2009, 2010a, 2010b), I collected an international pool of more than a thousand Web sites representing businesses and individuals offering technical communication services. Sites that did not show evidence of ongoing maintenance were removed (see Killoran, 2009, for details of this culling process), leaving a pool of 638 sites. After a brief pilot study (described in Killoran, 2009), proprietors of these 638 were e-mailed a solicitation to participate in a Web-based survey, and nonrespondents were e-mailed two follow-up solicitations. A total of 240 usable questionnaires from respondents in 15 countries was received.

When factoring in six unusable questionnaires and factoring out 17 sets of undeliverable e-mails to sites posting defunct e-mail addresses, the response rate was 39.6%. Seen in light of the response rates in other surveys of workplace writing, which in pre-Internet studies typically lingered under 50% (Anderson, 1985b, p. 468) and which more recently have been falling (e.g., Eaton, Brewer, Portewig, & Davidson, 2008, pp. 115–116), this response rate is within a normal range. It compares favorably with response rates achieved in other surveys of small businesses about their Web sites (Flanagin, 2000; Pflughoeft, Ramamurthy, Soofi, Yasai-Ardekani, & Zahedi, 2003) and of independent technical communicators (STC, 2004; STC Consulting and Independent Contracting SIG, 2005).

Survey

The survey instrument, as well as the follow-up interviews, inquired into many facets of a participant's business Web site, not just the (absence of) samples, a diversity of purposes that is common in survey-based research (Anderson, 1985b, p. 457). Only two survey questions are pertinent to this article. The first, a multipart question, asked respondents to rate the helpfulness, to their business specifically, of each of several features frequently appearing on the business Web sites of independent technical communicators, including a "portfolio or samples of your work." The main text of the question read as follows:

Listed below are some kinds of information featured on the business sites of many technical communication companies, consultants, and independent contractors. For those kinds of information featured on your site, how much has such information helped you market your technical communication services? (For information not featured on your site, answer "Not applicable.")

A numerical response scale for each Web site feature ranged from 0, defined as "[helped] not at all," to 3, defined as "[helped] a lot," with two additional response options indicating "don't know" and "not applicable."

The second question was a generalized version of the first, asking, "Overall, how useful has your Web site been to your business?" A comparable numerical response scale ranged again from 0, defined as "not at all useful," to 3, defined as "very useful," but unlike the previous question, no additional response options were offered.

Interviews

At the end of the survey questionnaire, respondents were asked if they would be willing to participate in a follow-up e-mail interview, and slightly more than half the survey respondents went on to complete the interview. To induce their consent, they were promised that the interviews would be brief, a condition that limited the interviews to about a half-dozen open-ended questions.

Interview questions were based on each participant's survey responses and Web site features, and so varied from participant to participant. Typically, survey respondents who had rated their posted work samples as relatively helpful in marketing their technical

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communication services were asked to explain how the samples were helpful, though in many cases, other Web site features that had been similarly rated were bundled into the same question. Usually, participants whose sites featured on-site samples were asked about how they managed to post such samples in the face of potential concerns about copyright, client confidentiality, nondisclosure agreements, and so forth. However, it was not feasible to inquire into the background of specific samples. In a few cases, participants whose sites did not feature samples but instead other detailed information about work for clients, such as case studies, were asked why they had not posted actual samples as well. In many cases, questions about samples could not be asked at all, in particular when a participant's site did not feature samples, as such questions had to compete with questions about other survey responses or Web site features.

Web Site Analysis

After the survey, participants' Web sites were downloaded to secure a stable corpus for analysis. One participant's site could not be accessed for downloading, and another participant's technically sophisticated site could be only partially downloaded, so both these sites were excluded from the remaining 238 that were analyzed. Note that only participants' business sites were downloaded, not other sites that they linked to. Because some participants linked to samples of their work posted on their clients' sites or indeed constituting their clients' sites, and because these samples or clients' entire sites have sometimes subsequently been changed or are no longer online, such off-site samples are not reliably available for analysis.

By definition, all Web portfolios include work samples, but not all samples posted on Web sites are included within portfolios; some samples are presented in isolation from other samples or without much accompanying introductory, explanatory, or reflective meta-text that is typical of portfolios. Accordingly, this analysis focused primarily on samples, and that term, rather than *portfolio*, will usually be favored below. This study operationally defined work samples as texts (e.g., documents or excerpts thereof, graphics, multimedia, Web sites, help systems) created by an independent practitioner (or business) for real or hypothetical clients and exemplifying the technical communication services that the independent practitioner (or business) is marketing to prospective clients. "Hypothetical"

clients were included so as not to exclude the coursework or practice work of novice technical communicators.

Each Web site was carefully examined to locate work samples or links to samples. In practice, samples were easy to locate, as these typically small Web sites, often geared to showcasing their owner's work, typically went out of their way to explicitly identify such work. Even off-site samples that could have subsequently been changed or are no longer accessible could easily be recognized by the HTML code of the outbound hyperlinks leading to them. But as off-site samples were not reliably available for analysis, and as some sites added very little meta-text about any of their samples, a detailed content analysis of the samples was not feasible. Instead, it was decided to simply tally the on-site and off-site samples. Tallies offered a straightforward, objective measure that could be easily and consistently applied across the diverse pool of 238 Web sites.

Results

This section opens with results of the tallies of Web-posted samples, along with a brief overview of how the Web sites presented those samples. This overview can serve to ground the quantitative and qualitative results that follow. In response to the first research question about the efficacy of posted samples, I present the results of the survey questions and then explore potential associations between these and the tallies of samples. In response to the second research question about how participants circumvented IP obstacles to post their samples, I draw on participants' interview responses, their Web-posted samples, and accompanying Web meta-text to summarize the challenges participants faced and then to explore participants' tactics for surmounting those challenges.

Posted Work Samples

Examination of the 238 Web sites revealed that more than half, 138, featured samples of their owners' work (see Table 1). Almost twice as many sites featured on-site samples as off-site samples, including many sites that featured both. Of the total pool of samples, the vast majority, almost four fifths, were hosted on participants' own sites, whereas the remaining one fifth were hosted typically on clients' sites (or constituted clients' sites) and accessed through hyperlinks. The typical site with samples averaged 14 samples, though this average was

inflated somewhat by some sites that featured several dozen each; the median number of samples was only 10.

Table 1: Tallies and percentages of Web sites with on-site, off-site, and any samples, and tallies of samples, in totals, averages, and medians

Types of samples	Number of sites	Numbers of samples		
		Total	Average among sites with such samples ^a	Median among sites with such samples ^a
On-site samples	120 (50%)	1514 (78%)	12.6	8
Off-site samples	68 (29%)	421 (22%)	6.2	4.5
All samples	138 (58%)	1,935 (100%)	14.0	10

^a Averages and medians of on-site and off-site samples exclude sites with 0 samples of their type.

Though the architecture of these small Web sites was quite diverse, samples were typically presented in one of two locations:

- in a section devoted explicitly to the samples, with its own link in the site navigation most commonly called “portfolio”;
- scattered across pages devoted to the business’s various communication service specialties, in which case a page describing a service specialty would typically follow up with a brief list of links to samples of work in that specialty.

In parallel with the reflective statements that educators recommend their students write to accompany their samples, Dimarco (2006, p. 103) and Kimball (2003, p. 154) recommended that practitioners introduce and orient viewers to their samples, but sites varied widely in the extent to which they included such meta-text. A few sites posted elaborate page-length introductions to each sample, typically describing elements of the rhetorical situation; the independent’s work process, digital tools, and/or “solution” to that

situation; perhaps the outcome for the client or the document; and perhaps a legal notice about the status of the sample itself, such as its copyright (such notices are discussed in greater detail below). However, many sites said little about their samples, often no more than a few phrases that perhaps identified the genre, document title, client, and/or IP status (e.g., copyright), but in general letting the samples speak for themselves.

The Efficacy of Posted Samples

Results of the survey question asking about how helpful participants’ Web portfolio or samples were in marketing their technical communication services reveal them to be fairly helpful. Table 2 (column 3) shows a clear trend toward the higher numerical ratings: More than a third of respondents chose the highest rating, 3, signifying that their samples helped “a lot.” The percentages drop for subsequently lower ratings, with 10% or fewer of the respondents choosing each of the two lowest numerical ratings, signifying helping “a little” or “not at all.”

Table 2: Survey respondents’ ratings of the usefulness of their Web site and their Web portfolio or work samples, in percentages

Response options ^a	Work samples’ helpfulness		Web site’s usefulness
	All respondents <i>n</i> = 240	Only respondents whose sites featured samples <i>n</i> = 138	<i>n</i> = 240
3 – Very / a lot	35.4	50.0	41.7
2 – Moderately	19.2	24.6	33.8
1 – Slightly / a little	9.6	8.0	19.6
0 – Not at all	10.0	4.3	4.6
Don’t know	6.7	9.4	--
N/A (Not applicable)	19.2	3.6	--
No response	0	0	0.4

Note: Because of rounding, percentages may not add up to 100.

^a Response options for these two survey questions used a similar 0–3 numerical scale but defined slightly differently these ratings of a Web site’s overall usefulness and a portfolio’s or samples’ marketing helpfulness. Where they are different, both sets of terminology are listed.

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These results bear closer scrutiny, however, as almost a third of respondents who chose a numerical rating, 57 of 177, did not actually feature samples on, or linked from, their Web site at the time the site was downloaded for analysis (and five who chose the *not applicable* response had sites that did in fact feature samples). Along with hastiness and inattentiveness that are common to many surveys, several possible explanations might account for such discrepancies:

- Some participants may have previously posted portfolios or samples on their sites only to have removed them before I downloaded their sites. Indeed, ongoing informal comparisons of the live sites with their downloaded versions have often shown that samples and entire portfolios have subsequently been added or removed.
- Some participants appeared to have held a more generous understanding of what constitutes a work sample than that indicated in the operational definition, listing among their samples texts created not for real or hypothetical clients but for themselves, for instance, such as their own Web site itself. By such a generous understanding, 100% of participants' sites posted samples of their owner's work. (The operational definition was not included in the questionnaire.)
- Some participants may have conflated a portfolio or samples posted publically on a Web site with those that they would show to prospective clients by more private means. Indeed, a few who responded to the survey question about a portfolio or samples with a numerical rating actually explained on their sites why they did not post such samples and invited prospective clients instead to contact them to view samples.
- Some participants appear to have held a different understanding of the response options than that indicated in the questionnaire. In particular, even though the *not applicable* (*N/A*) response option was explained in the question itself, more than a third of respondents avoided it in their response not only to this question but (somewhat implausibly) to the other 18 questions in which it appeared; in its place, many seemed to favor the 0 response option, which the questionnaire always listed first. Among

the 57 participants presenting such discrepancies with the question about their portfolio or samples, the majority never chose the *N/A* response option throughout the questionnaire, and the plurality chose the rating 0 in response to this question, suggesting that many may have been similarly substituting 0 for *N/A*.

Among the 138 participants whose sites actually featured samples (as operationally defined) at the time their sites were downloaded, half rated such samples with the highest numerical rating of 3, signifying helping "a lot," and close to a quarter chose the second highest rating, helping "moderately" (see Table 2, column 3). By contrast, only a combined eighth of respondents chose the two lower numerical ratings. Compared with the corresponding ratings from all 240 respondents (in column 2), these generally high ratings from this subset of respondents with the freshest experience of a Web portfolio or samples provide an even stronger affirmation of their efficacy.

To answer the first research question with more precision, we can determine whether the quantity of samples is associated with their efficacy by testing for possible associations between the tallies of samples on participants' Web sites and participants' ratings of those samples. The survey's four numerical ratings from 0–3 could provide a scale of four efficacy levels, but as relatively few participants chose the lower ratings, a comparison among the four lopsided groups would likely be skewed. Accordingly, sets of samples receiving ratings of 0, 1, or 2 were combined into one "less helpful" group and contrasted with the "very helpful" sets of samples receiving ratings of 3. Bisecting the range of survey ratings in this way produces two roughly equal halves, ensuring an optimally robust comparison.

As shown in Table 3, a *t*-test revealed that the sets of samples rated as very helpful featured significantly more samples than did those rated as less helpful. This positive association raises the possibility that one factor making samples into helpful marketing resources may be their sheer number.

The other survey question asked about the Web site's overall usefulness (its results are shown in Table 2) and hence might be expected to be less sensitive to the numbers of samples, as samples were just one of many potential features on independent technical

communicators' Web sites and were absent from a large minority of participants' sites. Nevertheless, a similar analysis performed with the comparable "very useful" and "less useful" groups formed from ratings in this survey question produced similar results: As shown in Table 3, Web sites rated as very useful featured significantly more samples than did those rated as less useful. Note that, unlike the previous *t*-test, this one included data from all 237 participants who answered the question (one did not) and whose Web sites could be analyzed (two could not), not just those with samples. This association between Web sites' samples, despite their absence from many sites, and Web sites' usefulness ratings raises the possibility that samples, where present, may be contributing significantly to Web sites' efficacy.

Indeed, when asked to explain how useful their site was to their business, participants frequently mentioned their Web portfolio or posted samples of their work. Some indicated that they created and used their sites primarily to display such samples, and several mentioned that they would direct prospects explicitly to the samples, or that the samples were the part of the site that prospects most frequently examined. For instance, one participant who rated his portfolio as helping a lot in marketing his technical communication services explained this high rating:

My web site is primarily a vehicle to show a portfolio of work that I have performed for clients. As such, it provides me with tremendous credibility when I reach out to new prospects. By featuring the names of clients that I know other web site visitors will recognize, along with the work I have done for them, prospects are able to overcome a significant barrier to doing business with me: the fact that I am

otherwise unknown to them. I think my web site is able to achieve this better than I could ever convey through alternative communication channels.

His site featured one of the largest portfolios in this study: 54 on-site samples mostly of white papers, his specialty, plus one link to an off-site sample, all featured in one long list organized mostly by client. In response to another interview question, he described one way he could confirm that his portfolio was reaching its audience:

When I reach out to new prospects, through email, I usually include a link to the portfolio section of my web site in the body of the email message. I have noticed that this does lead to more visits to my site - from analyzing web site logs kept by my ISP.

Challenges of Posting Samples

As useful as Web-posted samples appear to be for such marketing purposes, it becomes clear when examining participants' Web sites and interview responses that participants faced challenges in exhibiting samples of their work. The quantitative analysis above revealed that a large minority of Web sites featured no samples at all, and many that did mustered only a handful (see Table 1). Of the sites featuring samples, almost half linked to off-site samples, typically on or constituting clients' sites, indicating that many participants were quite willing to let other sites host their samples. Yet such off-site samples amounted to only slightly more than a fifth of all the samples tallied. Given how easy it is to post a link to an off-site sample, this relatively small portion of such links could indicate that clients seldom post the work that independent practitioners do for them. Accordingly,

Table 3: Average numbers of samples on Web sites whose samples rated as very helpful and less helpful, and on Web sites rated as very useful and less useful, and *t*-test statistics of the differences

Survey question	Very helpful/useful ^a			Less helpful/useful ^a			Comparison	
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>
Helpfulness of portfolio or samples ^b	69	17.9	17.1	51	10.1	8.2	103	3.31 **
Usefulness of Web site	100	11.5	16.6	137	5.7	8.3	135	3.21 **

Note: The *n* columns list the numbers of Web sites, whereas the *M* columns list the average numbers of samples on those sites.

^a Very helpful/useful sets of samples or Web sites includes those rated as 3, and less helpful/useful sets of samples or Web sites includes those rated as 2, 1, or 0.

^b Includes only sites with samples.

** $p < 0.01$

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practitioners would usually have to take the initiative to post samples of their work on their own sites.

The challenges participants faced in doing so emerged in their interview responses. For instance, the white paper specialist quoted above also recalled an episode early in his business when, because of IP constraints, he refrained from posting work that could have added much-needed credibility:

I have worked on material that was for my client's internal use only. . . . On one project I wrote material for the largest vendor in the market [in my area of specialty]. At the time I did not have many clients and posting the work on my site would definitely have given my services substantial credibility. However, I knew the material was for internal consumption only and could not be used for my personal marketing purposes.

Several participants likewise reported that they had not bothered asking their clients for permission to post work when they knew the answer would be *no*, or had been denied permission when they did ask. Typical among the reasons offered was the confidential or competitive nature of their clients' industries or their own work in particular, as well as the cumbersome permissions process itself. Among the industries mentioned as particularly sensitive to posting any kind of material was national defense. For instance, one participant specializing in the defense industry explained,

Our work efforts are proprietary, and client confidential - no show and tell. We are not writing instructions for the proper operat[ion] of a can opener; we're creating data that keeps aircraft flying and devices that keep civilians out of harm's way.... There are client intellectual property rights and global security issues we need to protect!

Clients in less sensitive industries were sometimes concerned about revealing commercially valuable proprietary information to their competitors or potential paying customers. For instance, one participant offered as an example a project she worked on—

for a client who produces online content management software for organizations. The only thing I could potentially post from that project is the instructions for logging in on the site. Everything else shows what the [content management] interface looks like and would potentially reveal too much to their competition.

Perhaps as a consequence of such commercial pressures, many of the posted samples seemed to be texts originally designed for wide-ranging audiences and hence not devalued by exposure on participants' Web sites.

Even in cases in which the work might not have been so sensitive or commercially valuable as to preclude Web publication, a few participants mentioned that the process of pushing a permission request up a company's bureaucratic ladder was so time-consuming or intimidating that it discouraged them from trying. A participant whose site featured fictionalized case studies explained that she did not use real case studies or real samples of her work or even name some of her clients because "this would require obtaining permissions—often from folks several levels above the actual clients. I am not sure the effort to do this is worth it."

Finally, some participants describing IP challenges pointed not just to clients for whom they did work but to prospective clients who would be viewing such work on their Web site. Anticipating the concerns of security-conscious prospects about the dissemination of their own IP, some participants refrained from posting any samples at all or at least carefully considered the selection of samples they did post. For instance, one participant whose site featured only four samples explained:

I am very careful to avoid placing what looks like sensitive information on my site because I would not like to create the wrong impression with potential customers with whom I am not yet working, and who might fear that I am liable to place their sensitive material on the Internet.

His page of samples was introduced with a notice explaining that, "[i]n the interests of confidentiality," identifying details had been removed, and indeed, within the four samples themselves, no company names or other identifying information was featured.

Clearly, the work independent practitioners do for clients does not readily reappear as samples on practitioners' Web sites. In this light, let's examine how about half the participants managed to post at least some of their work on their sites. Adopting the rhetorical triangle of author, text, and audience that was discussed above, the following three sections report on the variety of ways participants intervened with each of these three stakeholders of their work's situation:

- Authorship, in particular how participants communicated with, or did not communicate with, their clients for consent to post work for clients as their own on their own Web site
- Text, in particular how participants selected, excerpted, redacted, and modified their work for clients to post as safe samples on their own Web site
- Audience, in particular how participants communicated to their Web site audiences, especially prospective clients, the status of the IP displayed or withheld from display on their site

Authorship

Interview responses revealed how participants would communicate, or in some cases not communicate, with their clients for consent to post participants' work on their own Web sites. Such communication sometimes started even before the work itself was started, in the form of IP terms and conditions explicitly spelled out in the contracts that practitioners negotiate with their clients. For instance, one participant quoted a clause that he used in his standard contract: "The Client gives the Writer permission to publish the documents he has produced under this contract on his own Web site, either as extracts or in full." Of course, some clients might not agree to such a clause, or would seek to impose conditions on it. This participant added, "In practice, I would only publish material that the client intends to be in the public domain." His site featured only four on-site samples.

Participants more often mentioned seeking clients' consent to post their work after a project had been completed. Waiting enabled them to specify precisely what document or excerpt they were interested in posting and, according to one participant, also avoided creating an impression before or during a client's project that the independent practitioner was preoccupied with

pursuing other clients. One participant explained the process by which she would seek clients' consent—a process that anticipated her clients' concerns, respected their prerogatives, and built trust:

I identified elements I would like to use, bearing in mind the issues of copyright and commercial sensitivity, asked about the theoretical possibility, created the extracts and approached clients to obtain permission. This was freely granted in every case - I would not publish anything without this permission. By showing exactly what I want to use and in what way when asking, this has always been granted and I always acknowledge the copyright. Most see it as a (very minor) way of promoting themselves as well.

A couple of participants mentioned that they preferred to make such requests by e-mail, especially with larger clients, so that they would receive permissions in written form and thereby avert potential IP disputes.

However, participants also reported that it was not always possible, or desirable, to ask former clients for such permission. Many independent technical communicators develop their Web sites only after several years in the profession, at which point they would recognize the opportunity to post samples of work done for clients or employers years earlier. Over that interval, those companies may have been bought out or ceased to operate. Accordingly, some participants mentioned posting without consent work they did for clients who had since become defunct. For instance, a participant who specialized in writing user documentation for technology companies explained that, because both a client for whom he wrote documentation and the products about which he wrote the documentation had become defunct, he did not bother to seek consent from the subsequent copyright holder to post a couple of the samples on his site:

I posted work for a company that was bought out by another company that was in turn bought out by still another company. I didn't have permission to post the samples, but I figured that since the products and company no longer existed, no one was likely to care. I tried to say nice things about

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the company on the pages with the samples. If the current owner of the copyright asks me to take the samples down, obviously I will.

Other participants likewise posted samples of work for clients without soliciting clients' consent, for other reasons. For instance, one participant confessed that he had not sought his clients' consent for posting two of his site's six samples because of the inconveniences of doing so and a likely denial, but nevertheless went ahead and posted them behind passwords: "Well, strictly speaking I should ask my client for permission, but it's a huge corporation, and I know that it would take forever and [I] would probably (if I'm honest) be turned down just because that's company policy. . . . Should my client(s) find out, I'll argue the case. . . ."

A few participants who similarly neglected to solicit their clients' consent pointed instead to customary practice within the outsourcing culture. For instance, one participant justified his posting of clients' work by pointing to—

an unwritten rule that small-scale availability of most internally developed technology documentation for that purpose [of showcasing as work samples] is a quietly accepted practice. My general rule of thumb is to post only dated material (at least five years old) or material that is decidedly non-sensitive or not covered by a nondisclosure agreement. If asked by a material owner to remove any material considered sensitive by that company, I would remove the material immediately.

Among his site's 15 samples was one announcing on its title page, "For [company name] Internal Use Only."

Similarly, another participant who, at the time of the interview, had only recently constructed her site acknowledged that IP rights for her site's ten samples resided with her clients but justified her use of them by pointing to analogous practices among independent practitioners:

I didn't advise anyone that I was using the material. I know that copyright passes to my clients, but I also know that Web developers routinely post thumbnails of the work they themselves have done, sometimes showing that copyright is shared, and

sometimes not. In a similar way, my photographer gave me copyright of the photo she took, but expressly retained the right to use the photo for her own promotion. I looked upon the building of my portfolio with this knowledge and experience in mind and easily concluded: why rock the boat when what I really, really needed was an online portfolio. Why give clients the opportunity to object when it's not entirely clear that they have grounds for objection, and when I'm not at all well placed to deal with any objection?

Text

A second way participants managed to post work samples on their site was by carefully selecting, excerpting, redacting, or modifying the work they did for clients. Anticipating their clients' IP concerns, some participants indicated that they had selected only samples that their clients would consent to, such as documents revealing only safe information, old documents that had outlived their confidentiality, or safe excerpts from otherwise sensitive documents. For instance, a participant who claimed never to have been refused permission to post work she had done for clients explained that she considered her clients' concerns when selecting work for her Web portfolio:

I show [clients] the piece I intend publishing, and ALWAYS choose something that's innocuous and definitely not confidential - that makes it much easier! For example, for the retail jeweller, I used a page about diamonds, NOT about their security alarm policies!

Her 27 on-site samples were mostly screen shots of single-page excerpts, rather than full documents. Obvious excerpts like these were quite common across this study's pool of samples. For instance, many samples included a full table of contents for a long document but not the complete contents themselves. One participant explained that the table of contents "showed that [she] had produced complex documents."

Participants also created publishable samples by redacting clients' confidential or proprietary information. Even a cursory examination of the 1,500-plus on-site samples revealed more than two dozen sites featuring samples with obvious redactions. Compiled

into a composite document, such redactions could constitute a sample entitled “[Document Title]” for “Company XXX” located in “Anytown,” with the phone number “(xxx) xxx-xxxx,” an e-mail address “john@xyzcompany.co.uk” and the corresponding Web address “www.xyzcompany.co.uk,” about “the XYZ Product” trademarked as the “XYZ brand” and featuring “Company Logo.” It would also feature passages of greeked text and blacked-out text. The illustrations would be blacked out or replaced with placeholder images, and the verbal content accompanying illustrations would be left blank or replaced with filler such as *sample text*. In their interview responses, a few participants referred to samples with such redactions as “sanitized” or “obfuscated.” Participants also described other sanitizing modifications that would be less obvious to an outside observer, as they went beyond hiding passages to actually modify them, such as by inventing fictitious names for a client’s products, rewriting passages at a more general level, or creating new graphics.

In some cases, participants admitted to sanitizing samples not to assuage their clients’ confidentiality concerns but to evade their clients’ discovery entirely. For instance, one participant admitted, “Some of these samples went up after the project was long over, and if I thought I could disguise the sample quite well I didn’t always get permission.” Several of her 32 on-site samples were clearly sanitized. Sometimes, however, a sanitized sample might still be recognizable to the client. Such was the experience of a participant who claimed to regularly sanitize his samples before posting them:

Once or twice I wasn’t careful enough about my “sanitizing.” The client emailed and asked me to take it down. I did immediately with profuse apologies. Had I gotten it right the first time, I would have been OK; but after that, I don’t use that sample at all.

His portfolio page featured six extant on-site samples, two of which were openly introduced as having been “sanitized” and featured redactions like the ones described above. Perhaps revealingly, another item listed among his samples, described as “sanitized selections” from a client’s document, linked instead to a page that announced, “So sorry. The sample you selected is currently unavailable.”

Audience

Finally, though many Web portfolios and samples were accompanied by relatively little meta-text, many participants did communicate to their Web site audiences the status of the IP displayed or withheld from display on their sites. Some portfolios and individual samples were accompanied by legal or quasilegal notices acknowledging the clients who held the copyright to the samples, the trademarks mentioned therein, and so forth. Apart from acknowledging clients’ IP, such familiarity with legal discourse signaled participants’ own regard for and compliance with IP policies, or at least the appearance thereof. One participant admitted to posting legal notices acknowledging his samples’ copyrights and registered trademarks as a preemptive attempt to fend off any complaints about work he had posted without securing his clients’ consent:

I know I’m running a fine line here. I don’t own the rights to this material. How do I prove that I can write procedure manuals, user manuals, online help if I cannot show samples of my work? I got around that issue by displaying the legal notices. Besides, I never signed any legal document that said that I could not use these documents for self promotion.

Counterbalancing the legal and quasilegal notices acknowledging clients’ IP were a few samples that retained markings indicating that they should not be disseminated indiscriminately on the Web. For instance, one site’s sample request for proposals, an uncommon genre in the pool of samples, featured a long proprietary statement that concluded, “Individuals with access to this information shall be bound by the nondisclosure confidentiality agreement.” However, across the pool of Web sites, such apparent indiscretions appeared to be outshone by messages reassuring Web audiences that clients’ consent had been obtained to post the samples. Some sites posting such notices also went on to explicitly reassure prospective clients of the independent practitioner’s policies regarding clients’ IP. For instance, one portfolio’s quasilegal notice included a statement announcing that the samples’ proprietary information might be redacted, followed by an uncharacteristically expressive promise: “We would do the same for you!” Another site specified that the technical communication

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business maintained the right to keep copies of clients' work for its portfolio, but in the next line promised "not [to] disclose or display any confidential material without written consent."

Among participants whose sites featured few or no samples, or whose samples were excerpted or redacted, many were not quiet about it. On their sites, they explained absences by pointing to clients' copyright over the work, client confidentiality, the samples' proprietary content, and nondisclosure agreements. In this way, they could make a virtue of the absences by showcasing, if not their work per se, then at least their discretion.

Many sites, including both those that did and those that did not exhibit samples, invited prospective clients to contact the independent practitioner to see (more) samples. The invitation alone gave participants the opportunity to advertise that they had lots to show, and in a few cases, the Web sites would list the genres or even individual projects for which samples were available, or would invite prospects to describe the kind of genre they wanted to see. So whereas their work's proprietary or confidential character prevented participants from posting such work on the Web, it did not prevent them from using the Web to arrange a more discreet exhibition of their work, such as by posting samples behind logins or passwords, e-mailing samples, mailing a CD-ROM portfolio or hard copy samples, or showing samples in person.

Above, we saw an example of a participant who, without his clients' consent, posted two work samples behind passwords. His Web site nevertheless maintained the appearance of discretion, announcing that the password would be made available only to qualified parties upon request. In the interview, he added that he would also include the password in cover letters for prospective jobs. Another participant followed a similar practice:

I have a number of samples that I would always be uncomfortable about making available on a public web site. However, for potential clients who are seriously negotiating a contract, I have set up password-protected ftp sites to which only I can grant access and in those situations I would direct the client to the password-protected site and supply the client with the login name and the password.

Though the home page of this participant's Web site did link to one public FTP page listing 15 accessible samples, there were no links to these other password-protected FTP sites, and so any samples they listed were not included in the tally. It is possible that other participants similarly posted samples on their servers without posting links to them, making them accessible only to prospects.

Discussion

Against a backdrop of concerns about IP problems mushrooming throughout digital media, this study has explored the work samples that independent contractors, consultants, and companies post on their business Web sites to market their technical communication services. In response to this study's first research question about the efficacy of such Web-posted samples, results from both the survey and the accompanying Web site analysis tend to affirm that they are effective. Independent practitioners with Web sites that exhibit work samples tend to find those samples helpful in marketing their services. Notwithstanding the obvious importance of the quality of samples, the quantity of samples is directly associated with practitioners' experience both of their samples' marketing helpfulness and of their Web sites' overall usefulness: More samples equates with more efficacy.

An association does not imply causality, of course, and other factors might be contributing to samples' association with efficacy. For instance, a greater commitment from Web site owners might be encouraging them not only to post greater numbers of samples but also to make greater investments in Web site marketing and thereby experience the resulting greater efficacy. However, the consistent associations together with the more direct evidence from the survey results collectively point to a most likely conclusion that posting work samples helps independent practitioners market their technical communication services. Such a conclusion lends support to the promise of Web portfolios beyond the well-studied educational environment and reaching into the business environment.

In response to the second research question about how independent practitioners overcome IP obstacles to post their work for clients on their own Web sites,

this study unearthed a repertoire of tactics. Results from the interviews and Web site analysis indicate that independent practitioners recast work for clients into work for their own Web site display by intervening with their clients, their work itself, and/or their Web site audiences:

- Practitioners communicate with their clients to elicit their consent to display their work. When communicating with clients is not feasible or not perceived to be advantageous or culturally warranted, some practitioners post their work regardless.
- Practitioners defuse their samples of potential IP problems by selecting for display only their innocuous work; excerpting sensitive documents; and redacting or modifying confidential and proprietary information. These tactics arguably involve a degree of self-censorship, but the redacting and modifying in particular typically removes only the work's identification with the clients and enables practitioners to post what has in effect become more their own work than their clients'.
- Practitioners use the occasion or expectation of presenting samples as an opportunity to demonstrate their discretion with their former clients' IP and thereby allay prospective clients' IP concerns: noting their clients' consent for, and the legal status of, work displayed on their site; accounting for the absence of (more) samples on their site; and offering alternative methods for viewing samples that they cannot display publicly.

These rhetorical interventions illustrate how, in contrast with accepting the IP status quo, acting proactively can enable practitioners to reclaim a degree of authorial license over their work for clients and its dissemination and reception.

Implications

This study bears obvious implications for independent practitioners: They can resourcefully exercise some authorial license to post their work for clients on their business Web sites and, by doing so, can better market their technical communication services. This study also bears some implications for any technical

communicators developing a portfolio, whether for employment, academic credentials, or professional certification. Technical communication job applicants and students are typically expected to present a portfolio of their work, increasingly a Web-accessible portfolio, and this study would reinforce the value of meeting that expectation. Like the independent practitioners in this study, however, job applicants should expect to confront IP challenges when seeking to include work done for their current or former employers, as should students when seeking to include work done for their service learning projects and co-op employers. To circumvent or defuse such challenges, technical communicators might draw some lessons from the repertoire of tactics documented by this study and accordingly intervene with their employers, their work itself, and/or their portfolio audiences. However, faced with the need to demonstrate not only good skills but also goodwill, practitioners should not adopt such tactics uncritically. They could instead use the occasion to disclose the full IP status of their work samples and thereby showcase their IP knowledge and ethical practices.

In addition, as of this writing, STC's recently formulated professional certification process proposes that technical communicators be certified on the basis of their portfolios (Jong, 2010a). According to STC Executive Director Kathryn Burton, certification applicants will accompany their portfolio samples with meta-text explaining how their work meets the certification criteria (Cuddihy, 2010). As well, according to Steven Jong, chair of the STC Certification Committee, the certification board "will require attestations from both the applicant and the applicant's client stating that the work presented is the applicant's and that [it] was satisfactory" (2010b), though apparently practice work will also be permitted (Jong, 2011; Pacino, 2010). To allay clients' IP concerns, the board will also require that clients' names be redacted from the work, and those evaluating the portfolios will be required to sign nondisclosure agreements (Jong, 2011).

Though assembling a portfolio for such a circumspect certification board would no doubt present fewer IP challenges than assembling one for display on the Web, the proposed certification process could nevertheless confront applicants with some IP challenges similar to those that confronted practitioners in this study. For instance, certification applicants may face

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challenges securing attestation from large, bureaucratic organizations or from clients or employers in sensitive industries. Likewise, applicants seeking retroactively to include work completed in the past could face challenges tracking down clients or employers that have since become defunct. The best time to attest to a technical communicator's work may be immediately after it is delivered, yet that is the point at which clients or employers would typically be most sensitive to the work's proprietary or confidential character and hence be reluctant to release the work to external audiences or even to reveal themselves in an attestation. Certification applicants might thus find their portfolios dominated by their more innocuous work. To expand their repertoire of work, they might consider redacting or modifying confidential and proprietary information from documents that would otherwise remain off limits, but such alterations might compromise the quality of the work or even a client's or employer's ability to legitimately attest to it.

To resolve similar IP challenges, many practitioners in this study acted quite resourcefully, but some acted in ways that seem ethically dubious. In justifying STC's certification initiative, Burton pointed out that a profession is built upon a three-part foundation: "[a] code of ethics, . . . a body of knowledge, and . . . some kind of recognized credential" (qtd. in Cuddihy, 2010). It would be unfortunate if an initiative to build one part of that foundation were to weaken another part. The ethically dubious actions exposed in this study would reinforce the merits of accompanying the certification criteria for technical communication knowledge, skills, and abilities with criteria for ethical practice, perhaps drawn from STC's own code of ethics (STC, 1998).

Limitations and Unanswered Questions

Prior to this research project, technical communicators' Web sites had not been subject to systematic analysis of this scale, and as is typical of an initial foray into a relatively new kind of discourse, this study bears limitations and raises more questions than it can answer. Some limitations have already been discussed above, in particular constraints upon the interviews, and discrepancies between some participants' survey ratings of their samples and the absence of such samples on their Web sites. In addition, a limitation of the first survey question in particular is in how it sought to

gauge the usefulness of Web site marketing features by asking not the audiences of such Web sites—prospective clients—but rather their owners, a condition that could have introduced considerable subjectivity into the responses.

Other limitations deserve the attention of researchers because they leave open questions that deserve further inquiry. This study enumerated almost 2,000 samples across more than 100 business Web sites, and because of its large scale, it was not designed to trace the provenance of individual samples. Each has a distinct story of how an independent practitioner shifted it from one rhetorical triangle to another. This study was able to compile a repertoire of tactics by which that shift might have developed, but it was in general not able to tie those tactics to particular features of authorship, text, and audience.

So too does work that never appeared on technical communicators' Web sites have its own story, and this study was not designed to tell that story in depth either. A sizable minority of sites in this study displayed no samples at all, and many others displayed only a handful. Extrapolating from findings in Rife's (2010) survey of technical communicators, in which almost half were chilled into withholding material from the Web, we could reasonably suppose that behind the almost 2,000 samples enumerated by this study were likely many more thousands of pieces of work that participants could not post. Their absence from the Web, and hence from this study, leaves open the question of whether independent technical communicators' authorial license with their own Web sites is actually more limited than it appears to be here. In order to better understand how IP issues play out in practice, the difference between these two kinds of stories—those that end with a Web posting and those that do not—deserves further inquiry.

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Storytelling for User Experience: Crafting Stories for Better Design

Whitney Quesenbery and Kevin Brooks. 2010. Brooklyn, NY: Rosenfield Media. [ISBN 978-1-933820-47-7. 298 pages, including index. US\$39.00 (softcover).]



Rare is the colleague who will admit that her world turned upside down after she browsed *Harvard Business Review*. But after reading “Strategic Stories: How 3M Is Rewriting Business Planning” (May–June 1998), my hair stood on end after I discovered how 3M execs, much to the initial chagrin of meeting-table

audiences, had literally turned off their slide projectors and presented their business plans using narratives, not bullets. In *Storytelling for User Experience*, Quesenbery and Brooks understand that the path to an audience’s memory occurs not while “tak[ing] notes on the bullet points” but while digesting “the illustrations, examples, and anecdotes that help you remember the key points or grasp a new concept on an emotional level” (p. 28).

Of course, you cannot just craft a campfire tale in order to communicate better in business: Stories are not a Band-Aid slapped on a random communication wound for faster recovery from (and for) disgruntled users. And, clearly, telling just any story to add spice to your user experience (UX) problem or success for your audience is unethical because it detracts from the ultimate goal: to inform your audience. As the authors point out, effective and ethical storytelling for UX design also requires keeping the story accurate and authentic. Moreover, ethical and effective storytelling for UX design depends upon truly listening to and observing users. Unfortunately, we observe what is convenient and do not know how to really listen to our users. Brooks’s story about a woman breaking down during a workshop on listening sticks out in my mind as proof that, whether we like it or not, there is an emotional component to learning, and we are user-design fools if we believe that a cognitive-only approach to writing documentation, for example, can give us the best product and the happiest users.

Storytelling for User Experience describes the types of stories suitable for UX design (the “point-of-pain” story is my favorite) before moving into the ethics of storytelling, where to get stories, and how best to use particular story types to connect to your audience. Although most chapters are how-to, you find many connected stories with related visuals: illustrations explaining interactive storytelling, for example, or cartoon sketches of the authors next to anecdotes that illustrate principles of storytelling for UX design, and with (surprise!) color, from rich forest-green backgrounds for chapter starts to blue bubbles for better clarity.

If you’re the analytical type who favors “hard” data over “soft” anecdotes, this book is *definitely* for you. Quesenbery and Brooks understand, for example, the preference for numbers and eye tracking in usability testing over the messy, seemingly unreliable stories of just one or two users. Yet, they show you not only how those one or two users represent a pattern of problems evident in all of the users’ experiences but also the importance of asking (and listening to the answers to) more *why* questions as opposed to *what* questions. *What* the user did during usability testing is crucial, but the *why* is often much more important, even though the user’s story might seem completely unrelated to the testing.

This insightful book looks into how storytelling is not only sometimes oral and often written, but also sometimes visual. There are several visual representations of UX, such as flowcharts (complete with UX photos), cartoons, design layouts, screenshots, and so on. The authors even offer a photo as an acceptable image to support a written story. Nevertheless, it is clear that “the image gives fewer explicit” (p. 260) details than do the words, and although the authors find this photo a viable accompaniment to the story, it is clear that a sketch (even a stick figure) would better portray the information presented in the written text.

Regardless of how you feel about the value of stories as effective user data and as evidence used in presentations, *Storytelling for User Experience* delivers on its promise to not only help you *want* to use stories in UX design but also show *how* these stories can be crafted and recrafted. Quesenbery and Brooks tell it best:

We're not talking about "Once upon a time" here. User experience stories aren't made up. They are based on data from listening and observing in formal and informal settings. They are just as valid as scientific research papers or business reports. (p. 27)

Nicole Amare

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Web Anatomy: Interaction Design Frameworks that Work

Robert Hoekman, Jr., and Jared Spool. 2010. Berkeley, CA: New Riders. [ISBN 978-0-321-63502-0. 213 pages, including index. US\$39.99 (softcover).]



Design is about synthesizing often conflicting requirements and giving form to that synthesis. As a Web designer, I would ideally spend most of my time identifying and synthesizing requirements, but we often spend the bulk of our project

time redesigning common interface elements. Instead, Robert Hoekman and Jared Spool offer us frameworks as a way to “standardize the boring support functionality so that we can spend less time *reinventing* and more time *inventing*” (p. 6).

Frameworks are sets of design patterns that collectively address the whole context of common Web design problems, such as sign-up, search, and checkout. *Web Anatomy* is a short, plain-spoken book that advocates reusability through frameworks composed of patterns and implemented with components. The authors’ goal is to teach you how to think about, identify, and use frameworks on your own. As such, this book is not a catalog of frameworks. Rather, it’s broken into three parts. The first part addresses the

case for frameworks and how they are to be created and maintained within your organization. The second part details four significant frameworks, the research and usability studies behind them, and considerations for implementing them in your own projects. And the third part addresses creating frameworks, implementing frameworks, and making them practical through the use or creation of libraries and stencils. The authors also advise you on how to sell frameworks within your organization by explaining how to measure the cost of frustration caused by poor design.

The authors do a good job of describing the elements of an interaction design framework and how to document them. In addition, they document and comment on common frameworks in detail. They document the catalog framework, for example, with a description, the context of use, a task flow, co-requisite frameworks, related frameworks, framework elements, and design criteria. The discussion of each framework includes examples of successfully and not-so-successfully implemented framework elements. Patterns that compose these frameworks are also discussed.

The authors originally intended to “present a simple introduction to frameworks along with an in-depth discussion of a catalog’s worth of common examples” (p.195). Instead, they have provided us with this short guide to thinking about, identifying, and using frameworks. That’s a good start. But they left the hard work of researching, documenting, and cataloging an interaction design framework library for another day. Such a reference guide would be helpful. I can see myself keeping such a book on my desk rather than on my bookshelf. The authors do promise us such a useful reference, not in book form, but as the first online, publicly available interaction design framework library. Indeed, the library exists and documents the same frameworks as *Web Anatomy*. But like many companion Web sites, the library has languished and has not been updated with additional frameworks since the book’s publication. Either way, the authors missed an opportunity. They would have done well to provide a more exhaustive catalog of frameworks, much as Christian Crumlish and Erin Malone’s *Designing Social Interfaces* (O’Reilly, 2009) details patterns for the social Web.

However, if you’re unfamiliar with the concept of patterns, components, and frameworks, this book is a

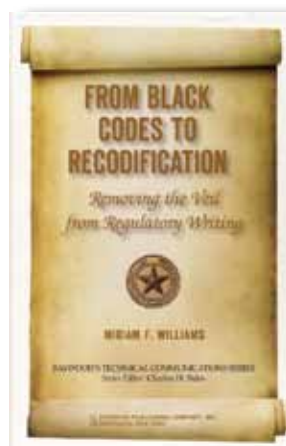
great primer and will get you thinking critically about how to incorporate frameworks into your design process.

Stewart McCoy

Stewart McCoy is an information architect at Mule Design Studio in San Francisco, CA. He maintains a portfolio and blog at stewartmccoy.com.

From Black Codes to Recodification: Removing the Veil from Regulatory Writing

Miriam F. Williams. 2010. Amityville, NY: Baywood Publishing Company, Inc. [ISBN 978-0-89503-376-5. 161 pages, including index. US\$39.95.]



Although slim for a textbook, *From Black Codes to Recodification* is written to be a guide to regulatory writing for graduate students and undergrads in technical communication or public policy. At a little over 150 pages in length, including appendixes, the book is unimintimidating and approachable even for students reluctant to tackle

rhetoric studies. Miriam F. Williams makes efficient use of her pages, giving a detailed analysis of three case studies while concentrating on differences in language and intent, examining rhetoric, and illustrating what to do and what not to do when writing laws.

From Black Codes to Recodification provides a regulatory contextual view of technical documents, comparing the reprehensible post-Civil War Texas Black Codes (written as a way to legally enforce virtual slavery on recently freed slaves) with modern Child-Care Licensing Division regulations in the same state. In this manner, Williams shows how the complex, jargon-filled legalese historically used for law-writing creates a veil that marginalizes certain audiences and can be applied to conceal true intent, while the modern Plain English approach builds trust in affected communities by simplifying and clarifying regulations, thus removing the veil. Through analyzing the Texas Black Codes in their historical and rhetorical context, the author presents an

argument for why African Americans may be distrustful of regulatory writing and outlines ways to build trust.

Williams makes her case in only six chapters, with one chapter serving as an introduction and another describing how technical documents at the time of the Texas Black Codes, including a “made plain” version, served to foment further distrust among African Americans. Three chapters are case studies that form the body of the book, covering how the Texas Black Codes contributed to distrust in affected constituents, the Plain English approach employed today by regulation writers, and how current African American business owners in Texas perceive both legalese and Plain English regulations.

In her final chapter, Williams offers a rule-making heuristic to build trust through regulatory writing. This heuristic seems to be what the entire book is leading up to, but ultimately it feels like *From Black Codes to Recodification* is written to argue the benefits of Plain English over legalese: Legalese (perhaps justifiably) is consistently portrayed negatively with few redeeming features, while Plain English is shown in a positive light. However, the shortcomings of Plain English are described as well, and Williams does take pains to show that Plain English needs to be properly written in order to build trust and make things better, echoing the Obama administration’s platform of government transparency.

Approximately one-third of the book, which is already short, is composed of four appendixes. Two appendixes are transcripts that detail Williams’s research processes, providing real-world examples that would be helpful to students and other researchers who want to re-create the author’s cultural-studies approach. I found the remaining appendixes to be the most useful, as the ample background information helped me better understand the case studies and Williams’s conclusions. The first one lists the original Texas Black Codes and the author’s Plain English versions. The second provides a rhetorical analysis of the legalese and Plain English versions of the Texas Black Codes and reads so well that it would actually work better as its own chapter.

Williams focuses her analysis on regulations pertaining to African Americans in Texas in order to keep analysis within a closed system (the Texas legislative body) and because of African Americans’ history of advocacy against discrimination. Williams also has personal experience writing for the government in the

Texas Child-Care Licensing Division, giving her insight into the more modern methods of regulatory writing. I understand this desire to maintain a narrow view, but I do wish that *From Black Codes to Recodification* contained more examples and case studies, possibly addressing federal regulations or other cultural groups. These could give additional support for the author's arguments or a progressive history of developments in regulatory writing. Instead, the book is tightly focused on two extreme examples more than a century apart. Perhaps expansion is something to consider for further revisions or additional volumes.

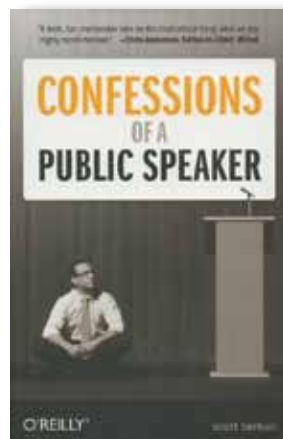
At its current length, *From Black Codes to Recodification* would be ideal as a supporting text for any course combining technical communication and political science, and with the author's concentration on using regulatory writing to build trust in historically marginalized communities, it is a perfect resource for anyone needing to communicate with a distrustful audience.

Devor Barton

Devor Barton holds a BA in communications from the University of Houston and a certificate of Project Management and an MS in technical communication from the University of Washington. He is a member of STC's Puget Sound Chapter and is an ICIA Certified Technology Specialist.

Confessions of a Public Speaker

Scott Berkun. 2010. Sebastopol, CA: O'Reilly Media. [ISBN 978-0-596-80199-1. 220 pages, including index. US\$24.99.]



Many STC members, me included, have some degree of public speaking experience. In light of this fact, it might be easy for us to look past Scott Berkun's new book. After all, STC member or not, the basics of effective public speaking have remained the same for generations: knowing your audience, preparing your materials, practicing your

speech, knowing and dealing with likely objections, and so on.

Berkun provides the basic information, to be sure, but what sets this book apart is the personality that comes forth in the writing. A veteran public speaker who earns \$5,000 per presentation, Berkun illustrates his points with examples from his own experience. He discusses practicing before giving a presentation and dealing with his own butterflies even after all the rehearsals.

I've learned from the book two lessons that I wish I had known when I began speaking at STC events. Berkun describes how to deal with a small crowd in a big room. If you've spoken at an STC event, you might have spoken in a room with a capacity of 200 people but had only, say, 15 to 20 in attendance—and they were scattered throughout the room. Berkun writes that when a small crowd is dispersed throughout that big room, your energy never effectively reaches everyone because it is eaten by the dead space. He suggests that you ask everyone to move up toward the front and center of the room. In this way, you can better focus your energy toward the audience.

Another useful lesson concerns the use of titles in presentations. Many speakers think of their titles at the last minute, after preparing their presentation content. Berkun suggests that an interesting title makes for a stronger presentation because it can guide your thinking as you create your presentation. When you must create

your next presentation, consider using one of the following titles:

- “The top five problems you have with (your topic) and how to solve them”
- “Why (your topic) sucks and what we can do about it”
- “Mistakes I made in (your topic) and what I learned”
- “Smart shortcuts and clever tricks only experts know about (your topic)”
- “The most frequently asked questions and brilliant answers about (your topic)”

Even in reviewing these headings, I almost feel inspired to create a presentation for an STC event, or at least rewrite some of the presentations I have made at past conferences and meetings.

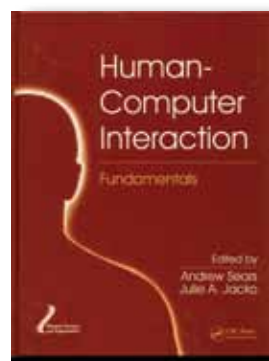
Not many how-to books can both inform and entertain. Berkun has written such a book.

George Slaughter

George Slaughter is a senior technical writer with The Integrity Group and a past STC Houston president.

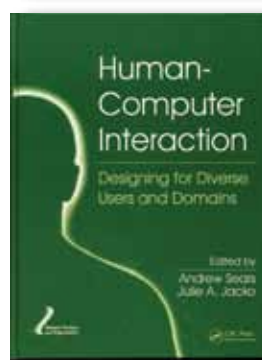
Human-Computer Interaction: Development Process

Andrew Sears and Julie A. Jacko, eds. 2009. 4 vols. Boca Raton, FL: CRC Press. [ISBN 978-1-4200-8881-6, 978-1-4200-8885-4, 978-1-4200-8887-8, 978-1-4200-8890-8. 1,300 pages. US\$89.95 per volume.]



In 2008, Lawrence Erlbaum Associates published the second edition of a 1,358-page collection of chapters by human-computer interaction (HCI) experts, *The Handbook of Human-Computer Interaction: Fundamentals, Evolving Technologies, and Emerging Applications*. This handbook, edited by highly respected HCI experts

Andrew Sears and Julie A. Jacko, includes chapters for newcomers and experts in both research and practice.



The Handbook has chapters from recognized experts, and unlike many popular HCI books and blogs, contains supporting references rather than just the personal opinions found so often on blogs and wikis. However, this massive handbook is overkill for many professionals. A practitioner involved, for instance, in commercial software development might find quite useful the 15 chapters in the part “The Development Process” (offering sound practical and conceptual advice on such critical topics as personas, task analysis, requirements specification, prototyping and survey design); however, the same reader would not find the other 40 chapters too useful. A different reader might focus on a completely different set of chapters. For those working on emerging technologies such as wearable computing and tangible user interfaces, only a few chapters might be appropriate.

The publisher, perhaps responding to this problem, has taken most of the content from *The Handbook* and split it into separate books on four major themes. Here are the subtitles of the four books with sample topics.

- *Fundamentals*: 16 chapters. Emotion, persuasive technology, human error, input techniques, visual displays, haptic displays, and wearable computers.
- *Design Issues, Solutions, and Applications*: 16 chapters. Visual design principles, global design, mobile interaction design, online communities, and HCI and privacy.
- *Designing for Diverse Users and Domains*: 13 chapters. Gender, age, HCI for kids, perceptual impairments, designing for the deaf and hard of

hearing, HCI in health care, and motor vehicle–driver interfaces.

- *The Development Process*: 15 chapters. HCI and software engineering, inspection-based evaluation, usability testing, personas, task analysis, and requirements specification.

Each chapter in the four mini-handbooks starts with a detailed table of contents that directs you to specific topics—important since chapters are often 10 to 30 pages long. For example, I was recently looking in *Designing for Diverse Users and Domains* for information on text-entry issues for people with disabilities, and a quick scan of the chapter table of contents helped me quickly locate the desired information.

Although the number of chapters and the mix of research and practice across four books make it hard to critique the content in a short review, after heavy testing I rate the general quality of the content as high. Visual appeal and readability vary. Some chapters, especially those on research topics, are dense with text. Other chapters make good use of visuals, tables, and bulleted lists. The chapter on mental models in HCI in *Fundamentals*, for example, has good information, but its dense text makes for difficult reading.

A major issue is whether to purchase the *Handbook* with all the chapters or one or more of the set of four *Human-Computer Interaction* books that are relevant to your role and primary professional interests. The major problem with the separate books is that you may want general information on a topic like ethnographic methods (found in *The Development Process*) but also want details on how to apply that to the design of a health care product (found in *Designing for Diverse Users and Domains*) or a decision support system (found in *Design Issues, Solutions, and Applications*). Of the four mini-handbooks, *The Development Process* is likely to have the broadest appeal, since it describes methods (including contextual design, scenarios, and prototyping techniques) that are used by nearly all HCI practitioners. If you are a consultant, for example, and have broad interests and projects, you might want to purchase the single-volume *Handbook*. Students in HCI programs could make good use of the separate *Fundamentals* and *Design Issues, Solutions, and Applications* books. If your interests are on the practitioner side, *The Development Process* would be quite useful.

As a consumer of many chapters from the set of four books, I can give a hearty recommendation for the

content and credibility of the chapters. My suggestion is to go online and check out the table of contents for each of the separate books and decide whether it is more cost-effective to buy one or more of them or to purchase the full *Handbook of Human-Computer Interaction*.

Chauncey Wilson

Chauncey Wilson is an STC Associate Fellow with 30 years of usability experience. He is senior manager of the Autodesk AEC User Research Team, an adjunct lecturer at Bentley University, and a frequent speaker at professional conferences. Chauncey has published many articles and book chapters on human-computer interaction and psychology.

The Rhetorical Nature of XML: Constructing Knowledge in Networked Environments

J. D. Applen and Rudy McDaniel. 2009. New York, NY: Routledge. [ISBN 978-0-8058-6180-8. 389 pages, including index. US\$44.95 (softcover).]



The Rhetorical Nature of XML shows technical communicators how they can “expand their skills and understand how to use, and not be used by, new communication technologies” (p. ix) such as single sourcing, classification systems, HTML, XML, and other social media venues. Its accompanying Web site, www.rhetoricalxml.com, contains “a repository of

XML tools and tutorials, links of interest, and sample documents,” as well as code examples (p. 4).

HTML is all about how you set (format) text and images and how you link the text and images to “go” somewhere else. “XML is about identifying, separating, and recombining specific data” (p. 42) needed for other purposes or designated content by using document type definitions (DTDs) and schema. It lets you use software to search and retrieve or locate and extract specific data, provided those data have been marked and coded appropriately in a database or Web site.

Both markup languages use a CSS. Yet, XML has its own style sheet, XSL, composed of XPath (an XML document navigating language), XSL-FO (a formatting

language), and XSLT (a document transforming language). XML lets you combine, share, and repurpose content by semantically describing the parts so the computer does the work for you. Yet, computers still need you to select, group, and manage XML tags.

The final chapter of *The Rhetorical Nature of XML* discusses five XML professions: technical communicators, technical editors, digital media practitioners, library scientists, and interdisciplinary professionals/researchers. The authors interviewed five XML professionals: a college professor, two technical communicators, a software engineer, and a professor who is a software developer. Each person has a different educational background, XML familiarity, and profession, yet they all use XML for projects. Applen and McDaniel asked each person ten questions on the ways they personally use XML to solve problems for particular types of tasks; the validation, transformation, and parsing techniques they used; and why they chose XML to solve these problems. Each person's response follows the question so that you can easily see the differences in how each XML professional handled resolving the problem or project with the use of XML.

As technical communicators, we need to understand how the rhetorical use of tools can help us improve our knowledge of subject areas, like XML, and the use of these tools in our profession.

Jackie Damrau

Jackie Damrau has more than 20 years of technical communication experience. She is a Fellow and member of the STC Puget Sound chapter and the Instructional Design & Learning SIG, and general manager of the STC International Summit Awards. She serves as the Book Review Editor for *Technical Communication*.

Good Faith Collaboration: The Culture of Wikipedia

Joseph Michael Reagle, Jr. 2010. Cambridge, MA: The MIT Press. [ISBN 978-0-262-01447-2. 244 pages, including index. US\$27.95.]



Wikipedia, as defined by both Michael Reagle and Lawrence Lessig, professor of law at Harvard Law School, who wrote the foreword to this book, is a community formed by collaboration. (In my opinion, this is true of all communities in human history.)

A technical communicator is more apt to think of Wikipedia as an encyclopedia of useful facts. That also was Reagle's initial impression as he used the tool extensively for his graduate school research on Wikipedia. Because of his research interest, he eventually "found Wikipedia to be a compelling site for the study of collaboration" (p. xiii). This insight became the foundation for *Good Faith Collaboration*.

Of first importance, the author has performed a service by documenting in one location the progression of encyclopedias that preceded Wikipedia; the culture of that time; and the movers, shakers, and leaders of what has come to be the world's most-used free and open source collaboration software. The 60 pages of notes and cross-reference material at the end of the book attest to the author's extensive research.

Reagle explains terms common to Wikipedia and other online encyclopedias from their origin to current usage. For example, *Neutral Point of View (NPOV)* is the attitude that permits collaborators to write without judgment from the community, a freedom that is balanced by the reluctantly assumed role of *benevolent dictator*, who uses authority only in the face of events that might harm the community, such as a threatened hostile takeover by Neo-Nazis. The benevolent dictator prefers Theodore Roosevelt's leadership style: Speak softly and carry a big stick. *Trolls* are those who post controversial or irrelevant messages on a page to disrupt an online community. *Forking* occurs when collaborators do not see eye to eye on a topic and each proceeds in a different direction, creating a fork or branch for Wiki

users to choose. Some forks have resulted in separate encyclopedias, such as the Spanish-language *Enciclopedia Libre Universal*.

Movers' and shakers' projects discussed in detail include Paul Otlet's permanent world encyclopedia (1895), H. G. Wells's World Brain (1936), Vannevar Bush's memex (1945), Ted Nelson's Xanadu (1965), Michael Hart's Project Gutenberg (1971), the online Academic American Encyclopedia (1980s), Tim Berners-Lee's World Wide Web (1991), Ward Cunningham's WikiWikiWeb (1995), Richard Stallman's Free Universal Encyclopedia and Learning Resource (1999), Nupedia (2000), and www.wikipedia.com (2001).

Interesting though this history proves to be, it should be noted for those who wish to create an internal Wiki in their office that this is a "how-it-happened" book, not a "how-to" book.

Donna Ford

Donna Ford is current president of the Connecticut STC chapter. She has been a technical writer since 1987 in the hardware, software, and government health care industries.

Digital Design for Print and Web: An Introduction to Theory, Principles, and Techniques

John DiMarco. 2010. Hoboken, NJ: John Wiley & Sons, Inc. [ISBN 978-0-470-39836-4. 336 pages, including index. US\$75.00 (softcover).]



The preface of *Digital Design for Print and Web* argues that designers "must marry the principles of design to software techniques" (p. 11). Following this premise, John DiMarco offers a valuable balance of principles and applications.

Part I is dedicated to theory and principles. Although the organization could be more effective, the content is clear and comprehensive. DiMarco defines *graphic communication* and then sorts communication goals into four categories: information, persuasion, education, and entertainment.

For each, he provides a brief explanation and a list of related design principles. This introductory framework would be even more helpful if it reminded readers that communication goals are rarely neatly contained by one of the four categories.

DiMarco also offers a definition of *design* itself that demonstrates this complexity, describing it as "a spiraling process that is used to solve a problem and achieve a goal" (p. 30). Through a concise overview of modern design movements and their influence on current design thinking, he provides a second frame through which to think about design. He also includes a brief, helpful introduction to elements such as line and shape, and an in-depth discussion of color and typography.

DiMarco takes readers through the process of conceptualizing and planning a design and discussing several types of projects. His seven-step design process again foregrounds problem solving and the importance of audience, purpose, and context. As he notes, it is not the only approach, but readers, especially those new to design, will find it useful and comprehensive.

Part II focuses on tools and techniques: raster graphics, vector graphics, digital layout for print, and Web site development. Each discussion begins with a helpful overview followed by step-by-step technique lessons. For example, a chapter includes lessons for using layers, selecting, transforming, and other relatively basic tools in Adobe Photoshop before addressing more sophisticated features, such as masking, using levels to modify tone, and adjusting color balance. Similarly, in the coverage of vector graphics and page layout software, the lessons move logically from basic to more advanced and cover the most useful tools in Illustrator and InDesign.

The final chapter, on Web site design and development, follows a slightly different pattern, beginning with a discussion of design and development tasks. DiMarco revisits the design process here, focusing on the creation of a personal Web portfolio. The lessons, involving Photoshop, Fireworks, and Dreamweaver, maintain this focus, covering techniques that should enable the reader to make a significant start on building a Web site.

A few organizational quirks notwithstanding, *Digital Design* covers considerable ground. Professional communicators seeking to strengthen their design abilities will find the book useful. Students, the primary audience, will welcome the straightforward style,

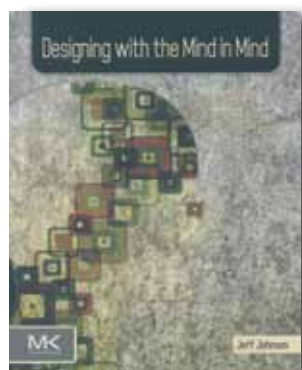
full-color examples, and clear step-by-step lessons. Instructors, too, will find the book valuable and will appreciate its online resources.

Eva Brumberger

Eva Brumberger teaches professional communication at Virginia Tech. She has worked as a technical writer/editor on both a full-time and a freelance basis. Her research interests include visual communication, international communication, and pedagogy. She is a member of STC and was president of the Border Network Chapter.

Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules

Jeff Johnson. 2010. Burlington, MA: Morgan Kaufmann. [ISBN 978-0-12-375030-3. 186 pages, including index. US\$49.95 (softcover).]



As technical communicators, we focus on people—on what works well for those who use what we and our colleagues are developing. Field studies and usability testing help us. So does having a deep understanding of “how people perceive, learn, reason, remember, and convert intentions into action” (p. xiii).

In *Designing with the Mind in Mind*, Jeff Johnson promises that “you will learn the most important aspects of the psychology underlying user-interface and usability design guidelines” (p. xiii). He delivers on that promise.

Designing with the Mind in Mind is very well written and understandable. Johnson’s writing, even the chapter headings, speaks to his audience with personal pronouns that include all of us: “Our Color Vision Is Limited,” “Our Memory Is Imperfect,” “We Have Time Requirements.”

Technical communicators may be particularly interested in the chapter “Reading Is Unnatural.” As Johnson explains, “we’re wired for language, but not for reading” (p. 33). He goes on to explain how the brain

deals with reading and gives excellent examples to show how poor information design can disrupt reading.

If you don’t have a background in cognitive psychology, *Designing with the Mind in Mind* can serve well as a “just enough” primer. In fewer than 200 pages, Johnson covers many aspects of psychology, linking each chapter to design guidelines with examples.

If you do have a background in cognitive psychology, you may find that Johnson updates your knowledge. For example, the modern view of short-term and long-term memory is quite different now than it was even a decade ago. Recent research shows that both are aspects of a single memory system rather than, in the old view, that short-term memory was a sort of buffer through which information passed, sometimes going on to long-term memory and sometimes not. Short-term memory is now thought of as “awareness” rather than as a “place.”

The book is beautifully presented. Like other recent books in the Elsevier/Morgan Kaufmann Interactive Technologies series, it is in full color with an open page design and many screenshots and other examples.

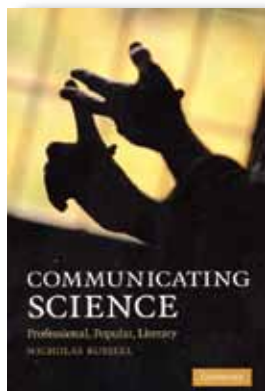
Jeff Johnson has the background to help us with this knowledge. He was part of the user interface team that created the Xerox Star (forerunner of the Macintosh and Windows). He has degrees in psychology from Yale and Stanford. Clearly, he has kept up with the literature on cognitive psychology and neuroscience to support his consulting and teaching work—and to bring us this book.

Janice (Ginny) Redish

Janice (Ginny) Redish is president of Redish & Associates in Bethesda, MD. Ginny is an STC Fellow and former member of STC’s Board of Directors. Her latest book, *Letting Go of the Words—Writing Web Content That Works* (Morgan Kaufmann, 2007), is still receiving rave reviews on book sites and in blogs.

Communicating Science: Professional, Popular, Literary

Nicholas Russell. 2010. New York, NY: Cambridge University Press. [ISBN 978-0-521-13172-8. 324 pages, including index. US\$32.99 (softcover).]



Contrary to what we might expect from its title, *Communicating Science* is not about how to communicate science. This book is an insightful discussion of the challenges and consequences of science communication. Drawing on his training as a botanist, freelance science writing experience, and extensive reading in both

science and literature, Nicholas Russell explores how science communication shapes and reflects the interconnections of science and society.

Writing from a social constructionist stance in an informal style, as illustrated by such phrasing as “truth is slippery stuff” (p. 149), Russell divides his analytical survey into five sections, each with four or five chapters, on scientists communicating to other scientists, scientists communicating with the public, scientific journalism, the origins of science in cultural contexts, and literary portrayals of science.

The most engaging portions of this book are the vignettes that introduce each chapter. Some are obviously fictitious, reading like parables; others are factual stories. Slightly problematic is the difficulty of distinguishing between fact and fiction at times, particularly in the first-person narratives. This minor complaint aside, these rehearsals of each chapter’s themes delight as they instruct and entice us into the chapters.

The first three sections, based on extensive secondary research, are the strongest and most applicable to our profession. Arousing our interest with such chapter titles as “Walk Like an Egyptian” and “Counting the Horse’s Teeth,” Russell critiques the cronyism of the peer-review system and deplores the “snake pit” conditions of scientists’ competition for short-term grant funding. But ultimately he concludes that no better system of monitoring scientific research has been devised.

Russell tackles science education, primarily the problems scientists encounter when presenting science to the lay public. He asserts that the difficulties stem mainly from scientists’ belief in the cognitive deficit model. Scientists tend to assume that if the public just knew more about science and understood it better, they would value science and scientists more. Russell rejects the deficit model of science education, insisting instead that people want to understand only the science that has meaning within their own personal, social, and cultural contexts. This key idea has implications for technical communicators. We must bear in mind that our audiences are not always best served by a large quantity of information. Audiences benefit most from assistance in interpreting and applying information to their tasks.

The remaining two sections are less absorbing, possibly because Russell tries to cover too much territory. These sections, a bit idiosyncratic and superficial, read like a historical survey textbook, which is not surprising given that Russell compiled the material for his postgraduate science communication students at Imperial College London. Nevertheless, his review of magic and alchemy as 17th-century precursors of natural philosophy, along with his explication of how science is portrayed in 19th-century Gothic fiction, including Shelley’s *Frankenstein*, are worth reading.

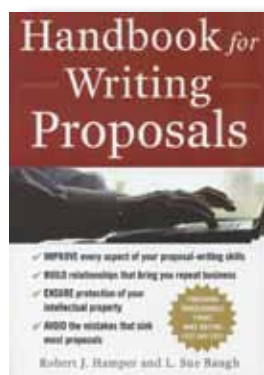
Clear and easy to read, *Communicating Science* is an important and enjoyable book.

Nancy MacKenzie

Nancy MacKenzie is a professor in the technical communication program at Minnesota State University, Mankato. She is a senior member of STC.

Handbook for Writing Proposals

Robert J. Hamper and L. Sue Baugh. 2011. 2nd ed. McGraw-Hill. [ISBN 978-0-07-174648-9. 248 pages, including appendixes, index, and bibliographies. US\$19.95 (softcover).]



Robert J. Hamper and L. Sue Baugh jump right into their topic in the introduction. For each of their eight chapters, they list a question that pertains to writing proposals and then briefly report how the chapter helps answer that question. You can work your way linearly through the chapters or start with the one that applies to

your situation.

The audience is those who own a business, manage a corporation, or just want to improve their proposal writing. This new edition incorporates more details on how to determine budgets and time/cost estimates, tips on international business English to accommodate a more global customer base, and downloadable forms that you can edit and customize. You have to register with McGraw-Hill to get to the download area.

The book starts abruptly, launching into three scenarios, and then succinctly moves to opportunities and pitfalls of proposal writing. The scenarios illustrate common responses to requests for proposals (RFPs). This rather short section demonstrates why the book was written: to show what to look at when developing an RFP, how to write your proposal, and how to present it to the potential customer.

The rest of the book gives in-depth advice and suggestions on the process. It presents the information in small chunks of clear, easy-to-read text with checklists and graphics interspersed throughout. Extensions of the first scenario appear periodically to illustrate the portion of the process being discussed.

Hamper and Baugh go over each section of a proposal, indicating who reads that section, how it should look, and what goes into it. They also include useful bits of knowledge, such as what is often the most underperforming portion of a proposal (management strategy) and why you should focus on it. The authors break down the criteria for using tables, charts, and

graphics and explain how to avoid common mistakes in their use.

Many of the graphics and the first three appendixes contain samples of paperwork showing how the end result should look. In the example for the main portion of the proposal, the authors use an outline format; it would have been helpful to offer two or three variations to give you more options, especially if you're a new proposal writer. The last three appendixes cover English usage in international business, frequently confused words, and frequently misspelled words.

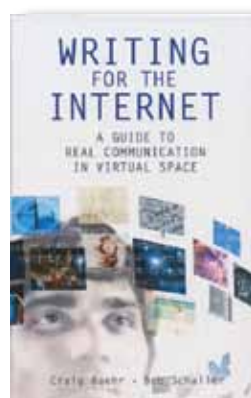
Overall, this book offers well-thought-out, clearly written advice without extraneous intrusions. You might still have questions about your particular applications, but you will have the information that you need to realize you should be asking those questions.

Sherry Shadday

Sherry Shadday works for Southwest Research Institute in Utah as a principal instructional specialist developing technical training and creating expert knowledge videos. An STC member, she retired from the U.S. Air Force as an aircraft electrical systems maintainer and has a technical communication master's degree from Utah State University.

Writing for the Internet: A Guide to Real Communication in Virtual Space

Craig Baehr and Bob Schaller. 2010. Santa Barbara, CA: Greenwood Press. [ISBN 978-0-313-37694-8. 224 pages, including index. US\$55.00.]



The title *Writing for the Internet: A Guide to Real Communication in Virtual Space* is somewhat misleading. This is not a how-to manual on writing for the Web. It is rather a collection of readings and essays, grounded in research and expert opinion, on issues and communication theory relating to media writing in today's multimedia world.

This guide is intended for journalism students who are taking on the challenges of writing as a vocation. It is primarily for "newspaper or magazine writers . . . video and audio broadcast

writers and other forms of multiplatform writing and publishing.” Other Internet communicators, “literally anyone who writes any form of digital communication” (p. vii), are also included in the target audience.

This book covers a lot of ground. The titles of the main sections—“Online Publishing,” “New Media News Writing,” “Internet Writing and Technologies,” “Visual and Interactive Rhetoric,” and “Social Media”—provide a broad overview of the contents. But much like Internet writing itself, no one section exists in isolation. As Craig Baehr and Bob Schaller stress throughout the book, the nature of Internet writing is interdisciplinary: “Writers must familiarize themselves with the entire range of skills required of online publishing, which . . . extends well beyond the task of writing and editing content” (p. 110). Thus, for example, a theoretical discussion of media convergence early in the book relates directly to practical advice on using content management systems that appears later. Yet Baehr and Schaller, who both teach at the university level, have created a guide in which each chapter, such as the one on digital content ownership, is able to stand alone as the basis for classroom exploration and individual student study.

While the book is not a writing manual per se and it does venture well beyond the bounds of content creation, students will glean succinct, practical advice on writing, in features such as the sidebar containing guidelines for writing effective hyperlinks and the “Ten Interviewing Tips” in the appendix. The chapters on narrative theory and blogging provide especially valuable insights into effective writing.

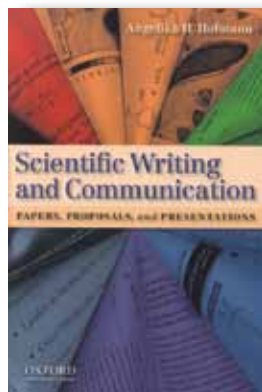
One of the authors’ stated goals is “to connect related theories and methods of Internet writing to working-world application and practice” (p. vii). Yet, like any book that sets out to teach about technology issues, it is in danger of being quickly outdated and, indeed, some of the material in *Writing for the Internet* already seems outmoded. Telling students how cell phones make use of Internet connections or that “university libraries are a particularly rich source of online material” (p. 67) suggests that some readings in this guide are less relevant to real-world application than others. However, used in conjunction with other texts and classroom discussion, *Writing for the Internet* should prove to be the catalyst for thoughtful exploration of contemporary issues in journalism.

Linda M. Davis

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds a master’s degree in communication management and has specialized in strategic communication planning, publication management, writing, and editing for more than 20 years. Linda is a member of IABC.

Scientific Writing and Communication: Papers, Proposals, and Presentations

Angelika H. Hofmann. 2010. New York, NY: Oxford University Press. [ISBN 978-0-19-539005-6. 704 pages, including appendixes, answer keys, glossary of English grammar terms, credits, and index. US\$ 34.95 (softcover).]



Angelika H. Hofmann’s comprehensive textbook, *Scientific Writing and Communication*, developed through “extensive class-testing” (p. xviii) in her science writing classes at Yale, stipulates that clear thinking depends on clear writing, that effective communication serves as a significant differentiator in scientific argument, and that

the science writer’s fundamental objective is to “Write with the reader in mind” (p. 12). As Hofmann shows, studies indicate that scientific readers object most to a lack of structure in writing, so she organizes the book around this principle.

Hofmann also follows her own advice, laying out her argument in an organized, detailed, but highly cross-referenced and visual design. Though entirely in grayscale and more than 700 pages long, the book is quite usable by either students on their own or instructors in the classroom. Enumerated sections (2.1, 2.2, and so forth), structural white space, and highly visible headings make the text easy to refer to in classroom discussion. Thumbs-down and thumbs-up icons indicate a problematic example followed by an improved version, and brackets in the margin highlight the structural function of sentences and paragraphs in the examples. English as a second language (ESL) problems and solutions are also bracketed and labeled “ESL advice.” Chapters end with lists of principles

studied and with a generous set of problems for students to solve (a key is provided in back).

Each element of the basic IMRAD report structure (Introduction, Methods and Materials, Results, and Discussion) is given a separate, detailed chapter, with particular emphasis on the “funnel” structure of introductions; the difference between results and discussion; the critical importance of abstracts as often the only thing editors and reviewers read or databases retrieve; and the need to make titles informative, the first page perfect, and the manuscript fit a journal’s specifications exactly.

Hofmann also explains why studying the granting organization before submitting proposals is vital and how “Many proposals are rejected by reviewers because of a bad Research Design section” (p. 452). She offers practical advice on how to deal with rejection and practical guidance on presenting schedules and budgets—topics not usually covered in technical writing textbooks.

Also helpful for students are the chapters on posters, presentations, and the job search. Posters should tell the story visually and “Provide an explicit, take-home message” (p. 500). Oral presentations require you to “Get to know your audience”; “Practice, practice, practice” (p. 517); follow the preacher’s maxim; “Think graphically” (p. 521); and “Avoid appalling sounds” such as “ums” and “uhs” (p. 529). The job search requires continual revision of CVs and resumes based on research into prospective employers, and the development of teaching and research statements, as well as portfolios.

The exhaustiveness and usability of Hofmann’s text make it a candidate for the only scientific writing text book anybody would ever need. The classroom-tested approach, highly detailed and clear explanations, a profusion of excellent examples, and attention to topics usually unfamiliar to students render the book an excellent resource and a very good value. Were I to teach a class in science writing at any level, this is the text I would use.

Donald R. Riccomini

Donald R. Riccomini is a member of STC and a lecturer in English at Santa Clara University, where he specializes in teaching engineering and technical communications. He previously spent 23 years in high technology as a technical writer, engineer, and manager in semiconductors, instrumentation, and server development.

Programming the Mobile Web

Maximiliano Firtman. 2010. Sebastopol, CA: O’Reilly Media, Inc. [ISBN 978-0-596-80778-8. 490 pages, including index. US\$49.99 (softcover).]



At the beginning of 2010, the United Nations Telecommunications Agency noted that more than 68 percent of the world is using mobile devices. Currently, there are more than 3,000 mobile devices on the market with about 30 different browsers. Statistics also indicate that the percentage of Web browsing

done from mobile devices will increase from the current figure of less than 4 percent as more Web sites are designed with the mobile market in mind.

Although the mobile Web architecture is much the same as that on your desktop, there are differences. For example, mobile devices involve different screen sizes, bandwidth, and processing capacity. Firtman’s *Programming the Mobile Web* identifies best practices for creating Web applications for these mobile browsers.

The main difference between desktop and mobile is screen size. A mobile screen measures only 1.5 to 3 inches diagonally, in contrast to a desktop screen of 17 or more inches, and it has roughly half the resolution. For the small screen, Firtman suggests such strategies as avoiding horizontal scrolling, using lists rather than tables, and keeping the main navigation to three or four links.

Browsers used on mobile devices include Internet Explorer, Safari on iOS, Android, webOS, Symbian WebKit, and BlackBerry. Firtman includes many useful compatibility tables for these and other browsers, showing how each handles such things as Adobe Flash, file upload, text input, and other coding markup.

Firtman points out the 80/20 law that 80% of your desktop site will not be useful to the mobile user. Therefore, you should consider what the navigation tree will be prior to doing any coding. He also suggests defining use cases, keeping in mind where the user is, why he is accessing your mobile Web site, and what information is he looking for.

Since I work with testing the user interfaces for our mobile applications, I like two cited resources in

particular: Firtman's list of user interface guidelines for both mobile and tablet Web application design at www.mobilexweb.com/go/uiguides and the W3C mobile best practices page, <http://www.w3.org/TR/mobile-bp/>.

Geolocation on a mobile device can help shoppers seeking a particular department inside a store or travelers trying to determine their current location. Firtman helpfully includes a table showing which browser/platforms support client geolocation.

Because it can be difficult to test your Web site on real devices, the chapter on testing, debugging, and performance includes alternatives to buying or renting devices. For example, Firtman suggests using a testing house company (an expensive solution), creating a beta tester program, or using a remote lab.

Because the mobile Web brings with it new usability patterns and best practices, Firtman's book is a useful one-stop reference. For example, he includes browser compatibility tables, along with the tips and suggestions (associated with the footprint icons) throughout that are helpful when doing mobile Web design.

Rhonda Lunemann

Rhonda Lunemann is a senior technical writer with Siemens PLM Software, a senior member of STC's Twin Cities Chapter, and a member of the Hill Speakers Toastmasters Club (Club 4415).

The Practice of Qualitative Research

Sharlene Nagy Hesse-Biber and Patricia Leavy. 2011. 2nd ed. Los Angeles, CA: Sage. [ISBN 978-1-4129-7457-8. 400 pages, including index. US\$57.95 (softcover).]



The Practice of Qualitative Research provides a reference for readers interested in qualitative research. The authors are sociologists, and many examples from sociology appear throughout the book.

The book is designed elegantly, and chapters contain several helpful features. Each has a glossary of key terms. Discussion questions allow

for further reflection and could be used effectively in a class. The Resources section of each chapter provides an annotated list of relevant Web sites and identifies relevant journals.

The first four chapters define qualitative research and provide lenses through which it may be viewed. You learn how to select the methodology for your study, which in turn will affect the research questions and the methods used to answer them. The discussions of sampling, validity, and reliability are brief but helpful. The chapter on ethics goes beyond the necessary mechanics of obtaining participants' informed consent and satisfying the requirements of institutional review boards: It describes common ethical issues that novice researchers face and offers strategies for finding effective solutions.

Each of the chapters on data selection focuses on a particular research method or a closely related set of methods. They offer useful how-to information while also providing a helpful overview, both of which will benefit you even if you do not plan to implement a particular method. The authors address in-depth interviews, oral history, focus group interviews, ethnography, content analysis, and "unobtrusive methods" (such as analyzing pictures, advertisements, audiovisual files, Web sites, and online discussions), case studies, and mixed method research.

Many "behind the scenes" vignettes provide insight into research projects researchers have conducted. These vignettes include subjects such as choosing a research topic and negotiating access to a research site. While some vignettes read like e-mails from the researcher, others are taken from the researcher's published work. They bring in examples outside the research by the book's authors while still focusing on typical social studies topics.

The final section addresses the analysis and interpretation of qualitative data. You might find the description of a four-step process helpful. The authors discuss in general how to choose a computer program for managing and coding qualitative data, but they identify only a few of the many programs available. Although the chapter on writing and presenting research results is short, it does contain a valuable section on representing participants' voices. Finally, the authors reiterate that ontology, epistemology, theory, and method all come together a holistic "research nexus." They identify emerging methods of research—and some

of the ethical considerations they bring—and note that your nexus will change over time.

Because the examples in the book are academic studies, I would encourage anyone interested in applying research in a workplace setting to seek out a different book. I would recommend this text for possible use in a research methods class or on a reading list for a graduate degree.

Russell Willerton

Russell Willerton teaches in the technical communication program at Boise State University.

Usability Testing Essentials: Ready, Set . . . Test!

Carol Barnum. 2011. Burlington, MA: Morgan Kaufmann. [ISBN 978-0-12-375092-1. 384 pages, including index. US\$49.95 (softcover).]



“U R Usability” is what Carol Barnum would say if you are a software or Web developer, interaction designer, information architect, technical communicator, visual or graphic designer, user-assistance specialist, instructional technologist, or involved in the development or support of a

product of any type. In *Usability Testing Essentials*, she intends to provide “the tools and techniques you need to get going or advance your knowledge of what you’re already doing” (p. 3).

Comprehensive and informative, *Usability Testing Essentials* is helpful for those who are new to usability testing and usability specialists. Barnum’s writing style is rather informal and very accessible. Much of the content is based on her practical experience as a usability professor and the director of the Usability Center at Southern Polytechnic University. She packs the book with real-world examples and tips, in addition to citing others in the field, such as Peter Morville and Jakob Nielsen.

With a diverse audience in mind, Barnum lucidly defines key terms such as *usability* and *heuristics* and explains the difference between *task* and *goal*, as

well as between *summative*, *formative*, and *iterative* testing. In addition, she employs chapter summaries, illustrations, screenshots, margin notes, and boxed sections that contain resources and tips to organize the material efficiently. If you are new to usability testing, you will appreciate the abundant sample documents (for example, screener form, moderator’s checklist, permission form, consent form, and pretest and posttask questionnaires) and the informative boxed sections, such as “Methods for Successful ‘Think-out-loud’ Procedure” (p. 211). The recommended books and articles that appear in the margins are also helpful for those who want additional information on the subject.

This book is very similar to Barnum’s *Usability Testing and Research* (Allyn & Bacon, 2001; reviewed in the May 2003 issue of *Technical Communication*) in that it provides a clear description of analyzing users, choosing testing models, planning and preparing for usability testing, conducting the test, and analyzing and reporting results.

However, in comparison to her previous book, *Usability Testing Essentials* is enriched with many full-color illustrations, in addition to having a chapter on international usability testing at the end. Although the basics of testing are similar in both local and international contexts, Barnum urges her readers working in an international context to consider the norms and expectations of the culture that they are testing. In particular, she explains the cultural differences in Internet shopping characteristics, information architecture, search patterns, and technology adoption. She also draws on the cultural research of anthropologist Edward Hall and sociologist Geert Hofstede to explain how we can better understand international users.

Furthermore, Barnum demonstrates the concepts she has presented with actual case studies based on the Chinese Holiday Inn Web site and the Costa Rican Web site for UPS. Examples from these case studies appear throughout the book (conveniently positioned between chapters on green pages) and include heuristic evaluation, usability test plan, sample test materials, session log, findings analysis, usability study report, and Web site analysis.

Barnum does not define *user-centered design* as thoroughly as she did in *Usability Testing and Research*, nor does she specifically discuss collaborative work or Web usability, although she does include numerous Web site examples in this book. The information on team

processes and group dynamics would have been useful for those who do collaborative work (which is perhaps a large percentage of the readers).

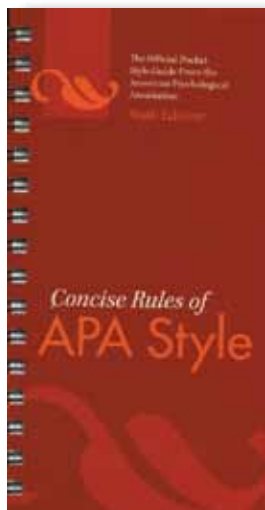
Overall, this is a thorough introduction and guide to usability testing. Barnum guides her readers from developing an understanding of usability and users, to planning, preparing and conducting the test, and finally analyzing and reporting the findings, in addition to giving them a brief overview of international usability testing.

Felicia Chong

Felicia Chong is pursuing a PhD in rhetoric and technical communication at Michigan Technological University. Her current research interests include usability testing and multimedia development and production. She has experience in teaching graphic design, Web design, digital photography, and college composition.

Concise Rules of APA Style

American Psychological Association. 2010. 6th ed. Washington, DC: American Psychological Association. [ISBN 978-1-4338-0560-8. 284 pages, including index. US\$28.95 (spiral-bound).]



The 4.5 by 8.5-inch spiral-bound *Concise Rules of APA Style*, sixth edition, provides an easy-to-use summary of the more commonly used rules and guidelines found in the sixth edition of the *Publication Manual of the American Psychological Association*. Although the introduction to *Concise Rules* points out that it covers the nuts and bolts of the rules for preparing manuscripts for the American Psychological Association journals, many

publications in other social sciences also follow APA style.

The chapters of *Concise Rules* cover the following topics:

1. Planning and writing articles
2. Punctuation, spelling, and capitalization

3. Italics and abbreviations
4. Numbers, metrification (using the metric system), and statistics
5. APA style for illustrations, figures, and tables
6. Footnotes, appendixes, and other supplemental material
7. Citing contributions of others and formatting quotations
8. Illustration of APA styles with examples

In addition, *Concise Rules* explains the changes in guidelines from earlier editions and then recommends that readers supplement the concise rules by reviewing the AP style Web site (www.apastyle.org).

Both the *APA Manual* and *Concise Rules* provide detailed guidance on the emergence of electronic publishing, including headings, citations with URLs and DOI identification numbers, and other changes. For example, in explaining DOI numbers, the *Concise Rules* says,

The DOI as article identifier. *A DOI is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a consistent link to its location on the Internet. (p. 203)*

Both books provide guidance on how to find the DOI identifier in journals as well as in electronic databases. For APA journals, the DOI identifier appears on the first page of the article in the upper right-hand corner and below the copyright information. In databases, the DOI is listed on a separate line of the Full Record Display.

APA style now calls for including the DOI identifier when citing journal articles in the reference lists of articles, and the DOI identifier should follow the last page number of the article in the reference list.

Overall, *Concise Rules* is carefully laid out, easy to read, and easy to follow. Colored tabs signify the different chapters. The table of contents and index indicate the respective guideline using a paragraph number and its page number.

With its spiral binding, the *Concise Rules* when open takes up only 9 inches by 8.5 inches and lies flat on the desk or computer table. That design makes it easier to flip through and find information than in the

perfect-bound *APA Manual*, which takes up about 10 inches by 14 inches when open—and does not lie flat.

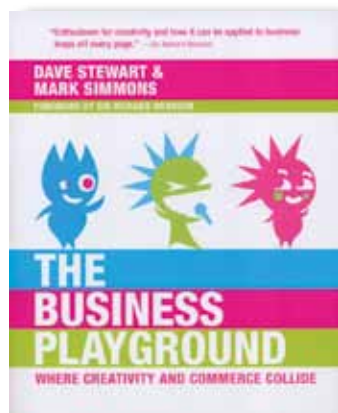
Both writers and editors should find *Concise Rules* a handy guide when using APA style in their manuscripts.

Don Zimmerman

Don Zimmerman is a professor in the Department of Journalism and Technical Communication at Colorado State University, Fort Collins. He played key roles in developing the department's MS and PhD degrees. His research includes Web site and interface design; usability testing; health, environmental, science, and technical communication; and technology transfer.

The Business Playground: Where Creativity and Commerce Collide

Dave Stewart and Mark Simmons. 2010. Berkeley, CA: New Riders. [ISBN 978-0-321-72058-0. 244 pages including index. US \$24.99 (softcover).]



When *The Business Playground* arrived in the mail and I opened the package, I have to say I was a little disappointed. I knew it was going to be about creativity; hence, the title. However, I was expecting a professionally published book like all the other books I purchase. What I got instead looks more like a

child's book with weird-looking characters on the cover and what I considered to be boldly obnoxious colors, and the inside seemed even worse. Some of the text is slanted, there are deep yellow highlights and big bolded text, the weird-looking characters run throughout the pages, and the colors, although toned down a bit, thankfully, are also part of every page.

I spend time telling you this because the design of the book has a great deal to do with the content. Within moments of starting *The Business Playground*, I was actually enjoying it far more than I should. I devoured this book, and not just because the content is rich with examples of creative successes in the workplace and fun and playful suggestions for breaking through barriers to

creativity. The book was just downright fun to read. The language, the style of writing, the content, the examples, the highlights, the colors, the weird-looking characters that became cute and fun to look at, and the genius evident on every page all took me by surprise.

OK, so what's the book about? In a word, creativity. It doesn't get any simpler than that. The authors create a compelling, fun, and playful environment to discuss what it means to be creative, how we lose our creativity, the barriers we run into when we try to reach those "aha moments." "Business Playground is about how us grownups can rediscover the magic of creativity that we all lived and breathed every day as children, and apply it to business" (p. 229). To this end, they include "techniques and games that can help get our creative muscles trained and ready for action" (p. 230).

But the book is not all fun and games. Well, OK, it is, but you will also learn a great deal along the way about when to work with others, when to develop ideas on your own, effective and fun ways to collaborate with others, and, most important, how to look at problems from different angles and come up with the right questions that could eventually lead to the very solution for one of the world's most pressing problems.

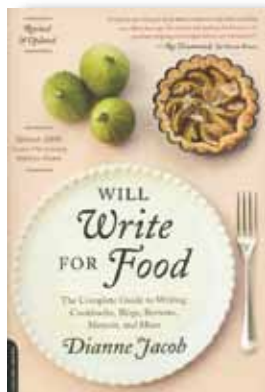
Who should read *The Business Playground*? All adults—no matter what your profession. Even if you don't fancy yourself a creative individual or someone who wants to change the world with the next best idea, read this book just so you stop settling for the status quo in your life. The only thing that could possibly go wrong is that you end up with an innovative idea.

Diane Martinez

Diane Martinez is a writing specialist for Kaplan University's online Writing Center and a PhD student at Utah State University. Her technical writing experience has been mostly in higher education, engineering, and government contracting. She has been with Kaplan since 2004 and a member of STC since 2005.

Will Write for Food: The Complete Guide to Writing Blogs, Cookbooks, Reviews, Memoirs, and More . . .

Dianne Jacob. 2010. 2nd ed. Cambridge, MA: Da Capo Lifelong Books.
[ISBN 978-0-7382-1404-7. 342 pages, including index. US\$15.95 (softcover).]



I sat down to read *Will Write for Food* with a steaming cup of white peony tea after running errands on a day that desperately wanted to snow. It was like sitting down with Dianne Jacob as my personal mentor for writing about food. Jacob's personality shines through her writing, making it a joy to read.

The book is organized to take you on a journey through the craft of food writing through the eyes of many seasoned writers, including Jacob: "People who love food are an eager, enthusiastic bunch, and it carries over when they write" (p. 22). But niche writing is a very competitive business. Because it is so competitive, Jacob suggests you start small, with a blog or coffeehouse newsletter, from which you can later jump to grander pursuits covering various subjects, from cookbooks and restaurant reviews to fiction. I find particularly intriguing cozies, "food-based murder mysteries based on ordinary characters" (p. 248). The final chapter is all about getting published, particularly in nonfiction, detailing how to create a book proposal and when and why to use an agent.

Practically speaking, the book is laid out chronologically, which makes it read almost like a novel. But because you are trying to learn, Jacob also includes references to other sections of the book that pertain to the current information. I would recommend reading the first three chapters, because they are a beginner's guide to food writing. The author explains that "many newcomers to the form focus on how food tastes and skimp on the other senses" (p. 8). After those chapters, the layout and references allow you to use the book as a set of instructions, and you can select whatever chapters meet your needs. This new edition includes more information about how to use the Web to your advantage, as in blogging. If you are starting with a blog, this is a great jumping-off point; you have your

first posts specific to the type of food writing you crave. Writing exercises end each chapter.

This book would be useful for both new writers and experienced writers who have not written for their own pleasure. It covers mostly writing imbued with personality because food is so personal: "A food writer's job is to be honest" (p. 30). Unlike more clinical and stoic writing, food writing encourages personality, even within the steps of a recipe. But as with any writing, if you are writing for a company, you may have to follow its style instead of your own.

In fact, this book contains so much useful information that with a creative eye you could use it as a guide to any type of niche writing, like knitting. The examples won't be directly useful, as in a comparison of writing styles from specific cooking magazines, but the examples still illustrate the point.

Angela Boyle

Angela Boyle is a technical writer for Tyler Technologies, Inc., where she has worked since April 2006. She graduated from the University of Washington with a BS in technical communication.

Qualitative Research in Technical Communication

James Conklin and George F. Hayhoe, eds. 2011. New York, NY: Routledge.
[ISBN 978-0-415-87636-0. 398 pages, including contributors' biographies and index. US\$44.95 (softcover).]



While quantitative research methods provide data that can be extrapolated to larger populations, they cannot provide the in-depth context that helps explain why respondents reacted the way they did. For example, in analyzing the results from a Web site usability study, researchers might find that 60% do not favor a particular design.

Although that statistic might prove to be a powerful argument in favor of an alternative design, technical communicators know that there are myriad reasons why a person prefers one design over another. Qualitative

methods allow researchers to understand the contexts and reasons for the responses.

James Conklin and George Hayhoe rightly describe a problem for technical communicators who must use research results in persuading scientists and engineers: Disciplines that rely on quantitative results for proof and support frequently ignore or devalue results that are not derived from quantitative methods. Their collection argues against this bias.

The editors also point out that students and researchers must adapt the descriptions of qualitative research methodology found in many social science texts to a technical communication situation in order to use qualitative research methods. However, 12 of the reprinted articles report results rather than describe methods.

The audience envisioned for this book includes practitioners, students, and anyone wanting to know how technical communication is practiced both today and in the future. The editors divide the book's 16 chapters into three parts: The first two chapters, conceptual essays from the 1990s, set the context for what is to follow. The second section (Chapters 3 to 14) reports the results of qualitative research projects. The book concludes with a synthesis and literature review and then a look ahead.

The introduction to each chapter sets the context and shows the relationship of that chapter to the rest of the book. These introductions relate to a specific article by Barbara Giammona (Chapter 3). That 2004 article reports the results of an extensive questionnaire addressing the future of technical communication. Of interest to the editors are the nine questions that Giammona poses based on the results.

One of the three new pieces in the collection, by Linda Driskill and Julie Watts, is a case study in communication among mathematicians. While the editors point out lessons for technical communicators in their short introduction to the piece, readers will need to extrapolate the techniques, methods, and interpretations of the data to their own situation.

The second new article, by Michael Hughes and Tom Reeves, is more directly related to technical communication, focusing on usability teams and the new knowledge they develop that leads to improvements in Web page design.

The third is an extended literature review by Debbie Davy and Christina Valecillos, students of coeditor

Hayhoe. It examines articles from 2003 to 2007, a rather narrow window considering that there have been four more years of qualitative research articles and books since.

In their conclusion, Hayhoe and Conklin make a strong case for the future of qualitative research methods in technical communication. Future practitioners as well as students at both the undergraduate and graduate levels will need to understand how qualitative research works—whether they intend to use such methods or need to read critically the research results of others.

As may be gathered from above, one disappointment of this volume is that it does not specifically address the unique issues faced by students in technical communication when doing or evaluating qualitative research. But, to be fair, that was not its intent. A second disappointment is that 12 of the 15 articles are reprints that are easily located, and of the 12 articles 11 come from one journal: *Technical Communication*. The lone exception is from *Technical Communication Quarterly*.

The value of this collection lies in its adding to the value of qualitative research methods for those doing and evaluating research in the academic and workplace settings. Should there be a second edition, I would hope that the editors would add at least one essay on qualitative research methodology itself and not leave it to the students and practitioners to deduce that method from the research reports published here.

Tom Warren

Tom Warren is an STC Fellow, a winner of the Jay R. Gould Award for teaching excellence, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he serves as guest professor at the University of Paderborn, Germany.

The Book of “Unnecessary” Quotation Marks: A Celebration of Creative Punctuation

Bethany Keeley. 2010. San Francisco, CA: Chronicle Books. [ISBN 978-0-8118-7645-2. 176 pages. US\$14.95.]

The Great Typo Hunt: Two Friends Changing the World, One Correction at a Time

Jeff Deck and Benjamin D. Herson. 2010. New York, NY: Crown Publishers. [ISBN 978-0-307-59107-4. 272 pages. US\$23.99.]



Copyeditors and other grammar geeks who cringe at public displays of bad punctuation, rest assured that we are not “alone.” Two recent volumes take us on a tour of bad signage across the country. For editors like me, these books fulfill an armchair fantasy to scale billboards and save humanity from misguided quotation marks and other typos.



Bethany Keeley, a PhD candidate in rhetoric, has spent seven years blogging about “unnecessary” quotation marks; she recently turned her blog into a full-color photo book that had me chuckling from cover to cover. She and her blog fans contributed photos and cheeky captions.

Jeff Deck, a former academic editor, collects typo sightings on his blog, too, but the heart of his book is a grand road tour with pal Benjamin Herson, “two friends changing the world, one cor[r]ection at a time.” Their focus on correcting—not just documenting—typos lands them in serious trouble with a federal agency, adding heft to their narrative.

Both books take us along for a ride, and Keeley’s color photos virtually put us in the passenger seat. She limits herself to a single punctuation error—misplaced quotation marks—and doggedly documents them.

Deck and Herson’s quest is broader, seeking out any type of typographical error and correcting it on the spot, usually (but not always) with permission of the sign maker. Their narrated tour is more of an inside joke, and it takes me back to the righteous indignation I felt at age 23, when I took my first editing job.

The two pals debate whether handwritten signs should be edited according to Chicago or AP style and offer insight into the nature of capitalism, employment, and education in the United States. They end with a proposal for reforming elementary school English instruction. Their “Appendix: A Field Guide to Typo Avoidance” (p. 251), is just as witty as Keeley’s photo captions.

Meek wordsmiths can find themselves emboldened by either author’s instructions on how to construct a personal typo kit. I envision armies of English majors whipping weapons out of a safari vest or shoulder sling. I particularly liked Keeley’s addition of a camera that can record video, “in case you catch someone making finger quotes in their speech,” and—inexplicably—a kazoo. Deck carried his typo correction kit like a sidearm, and a photo of it ended up as evidence in a federal case.

Deck started his Typo Eradication Advancement League (TEAL) with an ambitious (if tongue-in-cheek) mission statement: “[S]lowly the once-unassailable foundations of spelling are crumbling, and the time has come for the crisis to be addressed. We believe that only through working together with vigilance and a love of correctness can we achieve the beauty of a typo-free society” (p. 139).

Somewhere on the West Coast, a schism developed in the League, between the textbook-perfect prescriptivists, or “grammar hawks,” and the descriptivist “grammar hippies,” who recognize the fluidity of the English language. The argument led to a philosophical question: What if typos were not mistakes, but part of the natural evolution of English?

Keeley’s narrower mission gives her a platform for more humor and less zeal. She has come to view quotation marks as the “character actors of print, playing a wide variety of roles,” including “the word dimples that mark an adorable pun.” She hopes her audience will “find that quotation marks are merely the makings of a fun linguistic puzzle for you to solve” (p. 6).

Neither book is a grammar text or reference manual, but both have potential as supplemental reading for students. Deck and Herson take us along for a ride

with a pair of cool guys who take grammar seriously. Keeley's book resembles a PowerPoint show more than a narrative but could provide a platform for an engaging and educational scavenger hunt.

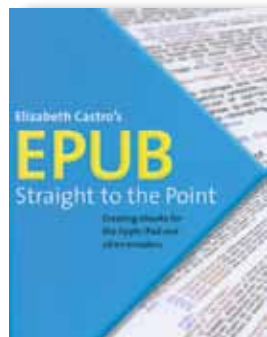
The two books would make dandy companion pieces for editors who like to keep their own scorecards, teachers who want to promote precision with a spoonful of sugar, and friends looking for the perfect gift for an editor pal.

Katherine J. Hall

Katherine J. Hall, PhD, edits *Northwest Public Health*, the journal of the University of Washington School of Public Health. An STC senior member, she won a "distinguished" award in the 2009–2010 International Technical Publications Competition.

EPUB Straight to the Point: Creating Ebooks for the Apple iPad and Other Ereaders

Elizabeth Castro. 2011. Berkeley, CA: Peachpit Press. [ISBN 978-0-321-73468-6. 191 pages, including index. US\$29.99 (softcover).]



Reading Elizabeth Castro's *EPUB Straight to the Point* is like sitting down at the computer with a knowledgeable friend who patiently walks you through the process of turning your text into a fully functional electronic book (e-book), helping you to avoid the pitfalls along the way. This

book is for anyone who wants to publish an e-book for e-readers that support the EPUB format, such as iPad, Nook, Sony Reader, Mobipocket (Blackberry) and Aldiko (Android), among others. The EPUB format is developed and maintained by International Digital Publishing Forum. An EPUB book is a specially constructed .zip file with the extension *epub*. Castro also gives advice and references for converting from EPUB to Amazon Kindle's Mobi format.

Using the model of her *Teach Yourself Visually* books, Castro uses copious examples, screen captures, and graphics in explaining how to use Microsoft Word and Adobe InDesign to generate the files needed to make up the EPUB book. She also explains how to

use a text editor to manually improve the files to take advantage of the abilities of the most advanced e-readers. EPUB is based on XHTML and CSS, and while Castro assumes some knowledge of these, the examples are understandable without this background. She refers you to other books for a full tutorial.

The chapters on using Word and InDesign to create EPUB files have extremely detailed procedures, interspersed with tips and helpful asides for both PC and Mac users. Castro also counsels about eliminating extraneous information that Word or InDesign might have inserted.

Castro also explains just enough of what's going on under the EPUB hood to help you optimize your EPUB file, including creating the e-book cover, adding metadata, compressing the files, getting your new EPUB file to the iPad, and checking the EPUB file's validity—a requirement for Apple's iBookstore. She describes how to download validation software and run the test yourself or have your EPUB files validated by a third-party vendor.

Castro provides an intriguing chapter on advanced EPUB formatting, including inserting images and controlling text wrap around them; and adding links, tables, and even video into your e-book. I wish she had also included a comprehensive list of the books she refers to, perhaps as an appendix.

In all, as promised, anyone who wants to publish an e-book should find this approachable little book very helpful. Elizabeth Castro is an accomplished and prolific author who writes in an engaging, conversational style and illustrates her points with short, relevant examples. This book left me wanting to try creating an EPUB book myself.

Marguerite Krupp

Marguerite Krupp is an STC Fellow, an adjunct professor at Northeastern University, and a technical writer with more than four decades of experience in the computer industry. She is a frequent presenter at conferences, an accomplished photographer and playwright, and the author of several general-interest freelance pieces.

Sherry Southard, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Sherry Southard at southards@ecu.edu.

"Recent and Relevant" does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers' addresses, covering nearly all the articles we have cited, appear in *Ulrich's International Periodicals Directory*.

Thanks to J. A. Dawson, who helped me assemble the manuscript for "Recent & Relevant."

Collaboration

Content collaboration at Citrix: Strategic insights

Varghese, M. (2010). *Best Practices*, 13, 18–22. [Center for Information Development Management]

To improve information sharing among the education, documentation, customer support, and other teams at Citrix, the company has created collaborative groups or "content councils" for each product released, with each council's activities facilitated by a content architect. The councils' goals are "to ensure content sharing and reuse and effective content delivery for a release." Regular council meetings may involve subject matter experts, content developers, and product managers, and the meetings "provide the council with a clear vision of the [product] release." For similar collaborative efforts to succeed, the article recommends that groups begin with clearly stated objectives, "innovate using existing tools and processes" to keep interactions simple, stay focused on audience needs, and meet regularly.

Lyn Gattis

Enhancing effectiveness on virtual teams: Understanding why traditional team skills are insufficient

Berry, G. R. (2011). *Journal of Business Communication*, 48, 186–206.

"Virtual team interactions are almost always assisted by some form of computer-mediated communication technology. Computer-mediated communication is different in many ways from traditional face-to-face communication, perhaps most significantly

because the communication is usually asynchronous instead of synchronous. Temporal independence of communication changes the patterns of work, decision making, and understandings about the work and the relationships between the individuals involved in the work. As a consequence, managing virtual teams is different and more complex than managing face-to-face teams, yet virtual teams are still groups of individuals that share most of the characteristics and dynamics found on traditional teams. The effective management of virtual teams requires knowledge and understanding of the fundamental principles of team dynamics regardless of the time, space, and communication differences between virtual and face-to-face work environments."

J. A. Dawson

Politeness, time constraints, and collaboration in decision-making meetings: A case study

Friess, E. (2011). *Technical Communication Quarterly*, 20, 114–138.

"Relatively little is known about the politeness strategies used by technical communicators and designers in group settings, particularly in the decision making, collaborative meetings of a real-world, naturally occurring group. This study explores the degree to which members of a well-established group linguistically express concern for their fellow collaborators and how that concern may be affected by the type and imminence of their deadlines."

J. A. Dawson

Communication

Ghosting authenticity: Characterization in corporate speechwriting

Bruss, K. S. (2011). *Journal of Business and Technical Communication*, 25, 159–183.

“One of the most distinctive stylistic virtues of speechwriting is characterization, the art of capturing a client’s voice in a believable and engaging manner. This article examines characterization in the context of corporate communication, interweaving an interview with veteran executive speechwriter Alan Perlman with accounts from the ancient rhetorical tradition. As the analysis shows, Perlman’s approach to characterization confirms long-standing rhetorical wisdom yet incorporates insights that reflect the contemporary corporate context in which he has worked. The analysis also calls attention to enduring tensions in characterization—tensions between imitation and representation, effectiveness and ethics, and dramatic character and trustworthy ethos.”

J. A. Dawson

The impact of the physical environment on supervisory communication skills transfer

Kupritz, V. W., & Hillsman, T. (2011). *Journal of Business Communication*, 48, 148–185.

“This ethnographic study extends the findings of earlier research that examined the impact of workplace design features on newly acquired communication skills back on the job. The qualitative nature of this earlier study, however, limited quantitative measurement of the design features and learned skills. The present study examined supervisor perceptions about the relative importance of organizational factors affecting transfer, measured relationships between learned skills and workplace design features, and prioritized the importance of the design features to support learned communication skills. Participants in this case study held nonacademic supervisory positions at a major land-grant university. The supervisors had attended a communication skills training workshop and had been applying their learned skills for about 6 months. The findings indicate

that workplace design appears to play a vital role in facilitating as well as impeding communication skills transfer in face-to-face interaction with employees. As a case study, organizations should not infer that these findings apply to all work settings as it may depend on the relevancy to the particular work situation and circumstances.”

J. A. Dawson

Mindful learning in crisis management

Veil, S. R. (2011). *Journal of Business Communication*, 48, 116–114.

“All crises emit warning signals. And yet, organizations do not typically see the warnings in time to learn and adapt to prevent a crisis. This conceptual analysis bridges a theoretical gap by connecting current crisis management literature to rhetorical theories that identify barriers to organizational learning. Two connecting models are introduced to outline the barriers to learning, propose the inclusion of learning throughout the crisis cycle, and encourage the adoption of a mindful culture. Previous crisis models are described and an explanation of the similarities between Burkean philosophy and crisis research is presented. The Mindful Learning Model demonstrates how, if barriers are overcome, learning can not only lessen the impact of a crisis but also potentially prevent a crisis from occurring. Contentions of this analysis are detailed and a research agenda to extend mindful learning is outlined.”

J. A. Dawson

Using communication theory to analyze corporate reporting strategies

Erickson, S. L., Weber, M., & Segovia, J. (2011). *Journal of Business Communication*, 48, 207–223.

“Regulatory reforms in the United States, such as Sarbanes-Oxley and Regulation Fair Disclosure, emphasize the significance of timely and transparent corporate reporting. Analysis of corporate financial disclosures using communication theory can provide useful information to stakeholders. Communication is a goal-directed activity that involves a purpose, and one of the central goals of communication for the corporation is to maintain a positive image. Benoit’s

theory of image restoration says that management presents the messages (responses) that are instrumental in obtaining the firm's goals. This article's objectives are to summarize Benoit's image restoration typology and to propose its potential use in analyzing management's communication strategies in financial reporting. The authors provide examples from corporate U.S. Securities and Exchange Commission (SEC) and annual reports of computer companies to illustrate the use of various communication strategies based on Benoit's typology."

J. A. Dawson

Design

Fortune 500 homepages: Design trends

Jones, S. L., & Degrow, D. (2011). *IEEE Transactions on Professional Communication*, 54, 18–30.

"This study is a comprehensive census of the homepage design practices of Fortune 500 companies, analyzing 46 elements of homepage design. The analysis establishes recent design trends of Fortune 500 homepages. In addition, it provides a snapshot of recent homepage design practices of the Fortune 500 that can be used for comparison with other populations and for future research and longitudinal studies of web design."

Jenny West

Education

Argumentation across the curriculum

Wolfe, C. R. (2011). *Written Communication*, 28, 193–219.

This article does not focus on technical communication, but addresses disciplines of students who complete foundational technical communication courses. "This study explores how different kinds of arguments are situated in academic contexts and provides an analysis of undergraduate writing assignments. Assignments were collected from the schools of business, education,

engineering, fine arts, and interdisciplinary studies as well as the humanities, natural sciences, and social sciences in the College of Arts and Science. A total of 265 undergraduate writing assignments from 71 courses were analyzed. Assignments were reliably categorized into these major categories of argumentative writing: explicitly thesis-driven assignments, text analysis, empirical arguments, decision-based arguments, proposals, short answer arguments, and compound arguments. A majority of writing assignments (59%) required argumentation. All engineering writing assignments required argumentation, as did 90% in fine arts, 80% of interdisciplinary assignments, 72% of social science assignments, 60% of education assignments, 53% in natural science, 47% in the humanities, and 46% in business. Argumentation is valued across the curriculum, yet different academic contexts require different forms of argumentation."

Sherry Southard

Connecting with the "other" in technical communication: World Englishes and ethos transformation of U.S. native English-speaking students

Bokor, M. J. K. (2011). *Technical Communication Quarterly*, 20, 208–237.

"This article reports my classroom-based qualitative research, conducted at a midwestern university, on the role of World Englishes in the ethos transformation of U.S. native English-speaking students. The 30 participants completed assignments that enhanced their understanding of how the English language affects discursive tasks in international audience adaptation. Efforts at internationalizing technical communication can benefit immensely from the inclusion of the World Englishes paradigm in training programs to account for students' language attitudes."

J. A. Dawson

Credibility judgment and verification behavior of college students concerning Wikipedia

Lim, S., & Simon, C. (2011). *First Monday*, 16(4), n.p. [<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/index>]

“This study examines credibility judgments in relation to peripheral cues and genre of Wikipedia articles, and attempts to understand user information verification behavior based on the theory of bounded rationality. Data were collected employing both an experiment and a survey at a large public university in the midwestern United States in Spring 2010. This study shows some interesting patterns. It appears that the effect of peripheral cues on credibility judgments differed according to genre. Those who did not verify information displayed a higher level of satisficing than those who did. Students used a variety of peripheral cues of Wikipedia. The exploratory data show that peer endorsement may be more important than formal authorities for user generated information sources, such as Wikipedia, which calls for further research.”

Sherry Southard

FYI: TMI: Toward a holistic social theory of information overload

Lincoln, A. (2011). *First Monday*, 16(3), n.p. [<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/index>]

“Research into information overload has been extensive and cross-disciplinary, producing a multitude of suggested causes and posed solutions. I argue that many of the conclusions arrived at by existing research, while laudable in their inventiveness and/or practicality, miss the mark by viewing information overload as a problem that can be understood (or even solved) by purely rational means. Such a perspective lacks a critical understanding in human information usage: much in the same way that economic models dependent on rationality for their explanations or projections fail (often spectacularly, as recent history attests), models that rely too heavily upon the same rational behavior, and not heavily enough upon the interplay of actual social dynamics—power, reputation, norms, and others—in their attempts to explain, project, or address information overload prove bankrupt as well. Furthermore, even research that displays greater

awareness of the social context in which overload exists often reveals a similar rationality in its conceptualization. That is, often the same ‘social’ approaches that offer potential advantages (in mitigating information overload) over their ‘non-social’ counterparts paradoxically raise new problems, requiring a reappraisal of overload that takes social issues into account holistically.”

Sherry Southard

Globalizing writing studies: The case of U.S. technical communication textbooks

Matsuda, A., & Matsuda, P. K. (2011). *Written Communication*, 28, 172–192.

“In an increasingly globalized world, writing courses, situated as they are in local institutional and rhetorical contexts, need to prepare writers for global writing situations. Taking introductory technical communication in the United States as a case study, this article describes how and to what extent global perspectives are incorporated into writing. Based on an analysis of eight textbooks and a closer analysis of four of them, we illustrate the representation of technical communication and communicators as well as multiculturalism and multilingualism in these textbooks and point out the limitations vis-à-vis the cultural and linguistic complexity of global technical communication in today’s world. We conclude by considering implications for U.S. college composition as it continues to contribute to the international discourse of writing studies.”

Sherry Southard

“I really don’t know what he meant by that”: How well do engineering students understand teachers’ comments on their writing?

Taylor, S. S. (2011). *Technical Communication Quarterly*, 20, 139–166.

“Text-based interviews that compared the teacher’s intention for a given comment on an engineering student’s paper with the student’s understanding of the comment were used to examine the extent to which students understand the comments they receive and

to determine the characteristics of comments that are well understood and those that are not. The teachers' comments analyzed in this study were fully understood only about half the time. Inclusion of a reason or explicit instructions helped students understand the comments."

J. A. Dawson

The media and the literacies: Media literacy, information literacy, digital literacy

Koltay, T. (2011). *Media, Culture & Society*, 33, 211–221.

"With the advent of digital technologies, awareness of media is acquiring crucial importance. Media literacy, information literacy and digital literacy are the three most prevailing concepts that focus on a critical approach towards media messages. This article gives an overview of the nature of these literacies, which show both similarities to and differences from each other. The various contexts of their functioning are outlined and additional literacies are mentioned. Especial attention is given to the question of the blurring line between media consumers and producers There is no single literacy that is appropriate for all people or for one person over all their lifetime and that would not require a constant updating of concepts and competences in accordance with the changing circumstances of the information environment (Bawden, 2008). Media literacy is important for all citizens who intentionally, or without knowing it, consume media, the presence of which has become wider and more diverse with the new digital technologies and the growing participation of laypersons. Media literacy thus has to find its role both in primary, secondary and higher education either on its own, or presumably—with more likelihood—as part of some kind of multiple or multimodal literacy."

Sherry Southard

Optimizing millennials' communication styles

Hartman, J. L., & McCambridge, J. (2011). *Business Communication Quarterly*, 74, 22–44.

"Millennials, those individuals born between 1980 and 2000, compose the largest cohort of college

students in the United States. Stereotypical views of millennials characterize them as technologically sophisticated multitaskers, capable of significant contributions to tomorrow's organizations, yet deficient in communication skills. This article offers insights for business educators to help millennials understand the influence of communication styles when optimizing communication effectiveness. Developing style-typing and style-flexing skills can serve as building blocks for millennials' subsequent interpersonal skill development in key areas such as audience analysis, active listening, conflict management and negotiation, and effective team building. An in-class exercise highlighting communication style-typing and style-flexing is included."

J. A. Dawson

The role of online learning in the merit and promotion process: Is credit necessary or applied?

Kupczynski, L, Gibson, A. M., & Challoo, L. (2011). *First Monday*, 16(3), n.p. [<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/index>]

"Traditionally, universities have awarded promotion/tenure based on subjective criteria developed by the granting institution and disregarded credit for creating and teaching an online course. Current standards for promotion/tenure at Texas public universities and the role that an online course should play in tenure/promotion process are explored. Texas was selected to represent national standards in the promotion and tenure process."

Sherry Southard

Teaching job interviewing skills with the help of television shows

Block J. (2011). *Business Communication Quarterly*, 74, 7–21.

"Because of its potential for humor and drama, job interviewing is frequently portrayed on television. This article discusses how scenes from popular television series such as *Everybody Loves Raymond*, *Friends*, and *The Mary Tyler Moore Show* can be used to teach effective job interview skills in business communication

courses. Television episodes may be used to examine in detail topics commonly covered in textbook discussions of job interviewing, such as attire, behavior, and interview questions; they may also be used to explore topics not typically addressed, such as gender issues and involvement of family members. The use of appropriate television scenes can enhance the job interviewing unit by attracting the students' attention and generating productive class discussion. The article also provides an overview of the relevant U.S. legality issues."

J. A. Dawson

Teaching the IMRaD genre: Sentence combining and pattern practice revisited

Wolfe, J., Britt, C., & Alexander, K. P. (2011). *Journal of Business and Technical Communication*, 25, 119–158.

"The authors describe two pedagogical strategies—rhetorical sentence combining and rhetorical pattern practice—that blend once-popular teaching techniques with rhetorical decision making. A literature review identified studies that associated linguistic and rhetorical knowledge with success in engineering writing; this information was used to create exercises teaching technical communication students to write Introduction, Methods, Results, and Discussion (IMRaD) reports. Two pilot studies report promising results: Preliminary findings suggest that students who were taught this method wrote essays that were perceived as significantly higher in quality than those written by students in a control section. At the same time, however, the pilot studies point to some challenges and shortcomings of exercise-oriented pedagogies."

J. A. Dawson

Unsettling assumptions and boundaries: Strategies for developing a critical perspective about business and management communication

Cockburn-Wootten, C., & Cockburn, T. (2011). *Business Communication Quarterly*, 74, 45–59.

"This article describes how a collaborative class strategy and an introductory activity were used to develop students' thinking about business and management

communication. The article focuses on teachers who want to integrate critical perspectives about business communication into their classes. A course ethos, learning groups, and an introductory activity were used to develop students' thinking about business and management communication. These strategies encouraged collaborative peer learning in a large bicultural/multicultural lecture environment and developed learning relationships typically found in a small class context. In addition, the activities produced ongoing lecture learning groups in which business students could question their 'trained incapacities,' boundaries, and assumptions gained from their experiences of communicating and managing relationships during these activities."

J. A. Dawson

Using key messages to explore rhetoric in professional writing

Shaver, L. (2011). *Journal of Business and Technical Communication*, 25, 219–236.

"This article introduces an assignment that uses key messages to introduce students to the different ways that rhetoric is used in professional writing. In particular, this article discusses how analyzing and writing reports about organizational web sites can help students perceive the rhetorical nature of professional communication, gain familiarity with several professional writing genres and writing conventions, become more critical readers, and recognize the relationship between an initial study and a report that communicates the findings from that study."

J. A. Dawson

Visuospatial thinking in the professional writing classroom

Lauer, C., & Sanchez, C. A. (2011). *Journal of Business and Technical Communication*, 25, 184–218.

"It has been suggested that teaching professional writing students how to think visually can improve their ability to design visual texts. This article extends this suggestion and explores how the ability to think visuospatially influenced students' success at designing visual texts in a small upper division class on visual communication.

Although all the students received the same instruction, students who demonstrated higher spatial faculties were more successful at developing and designing visual materials than were the other students in the class. This result suggests that the ability to think visuospatially is advantageous for learning how to communicate visually and that teaching students to think visuospatially should be a primary instructional focus to maximize all student learning.”

J. A. Dawson

When words fail us: Using visual composites in research reporting

Sligo, F. X., & Tilley, E. (2011). *Visual Communication*, 10, 63–85.

“This article describes a use of visual imagery in research reporting that helps to emphasize the human and social dimensions of research issues and encourage different ways of thinking about the findings and implications. During the literature review, in order to establish the authors’ longitudinal research into adult literacy, they observed that research participants’ own perspectives and rich life-worlds were usually invisible in final reports and articles, submerged under layers of governmental or scholarly discourse. An irony was that, while literacy theory was moving towards acknowledging multi-literacies, reporting of literacy research remained heavily mono-modal. The authors of this research wanted to differ from this trend by giving people who were affected by adult literacy policy a vivid presence within their reports. They were intrigued by the use of visual means to foreground interviewees’ own words both as a way to register their importance to readers and to try to signal the multi-modal nature of literacy. They depicted their interviewees’ words as language spoken by imagined individuals typical of the interviewees, grounded within photographs of their research site. In this article, the authors describe their intentions and methods in making their reports visual and artistic composites rather than more traditional densely worded policy reports; they deconstruct some of the key images contained in their report in order to critique their efficacy in achieving their aims.”

Sherry Southard

Information Management

Implementing the Big 3: A project management view on lessons learned on implementing an XML/DITA/CCMS publishing environment

Shumate, C. (2010). *Best Practices*, 13, 23–31. [Center for Information Development Management]

“Adopting a new document format, a new set of standards, and new database model for both development and delivery of content affects just about everything in a technical publications group.... It’s an overhaul of process, tools, skill sets, mind sets, scheduling, workflows, [and] ownership.” This article reviews the successes and lessons learned from the implementation of “a DITA-compliant, integrated component content management system (CCMS).” The article describes the sequence of implementation, including setting expectations at the start, building a strong project team, establishing efficient communication methods, researching the product, and planning carefully for reorganizing content, testing, and training. Recommended lead time before going live: 18 to 24 months.

Lyn Gattis

Industry trend: Quality at the source

Beaupre, J. (2010). *Best Practices*, 12: 119–121. [Center for Information Development Management]

“Today, companies must reach global markets faster if they want to remain competitive. To reach those markets most effectively, corporate content such as web sites, product information, and sales materials must be translated into their customers’ native language. However, translation and localization are often roadblocks to successfully releasing products into international markets quickly [This article addresses] strategies for dealing with the biggest challenges with localization—cost, time, and quality ... [It also explains how companies can] create an Information Quality strategy to decrease the cost of translation ... [and achieve their] strategic objectives of reaching global markets faster.”

Lyn Gattis

Reusing your DITA solution (or how to get money to buy one)

van den Oever, L. (2010). *Best Practices*, 12, 128–131. [Center for Information Development Management]

Although a Component Content Management System (CCMS) is essential to using DITA effectively, a CCMS is a large investment. Management may be more willing to budget for a CCMS if the organization can expand its use of DITA from documentation to other divisions within the enterprise. This article suggests identifying new areas in which “adding structure to documents can improve business efficiency,” such as engineering, product support, and sales and marketing teams. Further, the article recommends ways to present DITA to these new groups: “[I]ntroduce DITA with a familiar interface and jargon, stick with a strict and relevant structure, and use the right authoring tool for non-technical authors....” By presenting evidence that shared content benefits the organization overall, documentation groups can build a more convincing business case for the resources to support DITA appropriately.

Lyn Gattis

A study of the role of culture and communication in the CMS adoption process

Andersen, R. (2010). *Best Practices*, 12, 105, 108–118. [Center for Information Development Management]

“Information development groups are increasingly adopting component content management (CCM) technologies to efficiently author and manage content objects. Successful adoption of these technologies, however, requires a continuous exchange of knowledge, skills, and processes across vendor and information development group boundaries. Having an overly simplistic view of technology diffusion and insufficient training and resources, many groups struggle to achieve their CCM adoption goals.... [This article describes] some of the planning and learning challenges that one group faced when attempting to evaluate and adopt a CCM system, highlighting the role of culture and communication in that process.... [The article ends] with specific recommendations for information developers and vendors.”

Lyn Gattis

Successful localization in DITA

Yeo, S-L. (2010). *Best Practices*, 12, 122–127. [Center for Information Development Management]

“Using the DITA standard can bring enormous improvements in the efficiency of localizing documentation. Some organizations report efficiency gains of 30 to 50 percent over traditional desktop publishing systems and use the savings to expand further into global markets. While these numbers are compelling, localized DITA implementation is still a mystery to many potential adopters. The big picture of how it all works is not obvious, and the details affecting the quality and/or cost of localization are numerous. This article addresses the questions of ‘how does it work?’, ‘what do I need to plan for?’ and ‘what are the gotchas?’ Although DITA implementation strategies vary, and it is always necessary to adapt and test a localization system, this article can provide a starting point for adaptation and a framework for testing.”

Lyn Gattis

Intercultural Communication

Culture, communication, and ICT for development: A Caribbean study

Dysart, D., Pitula, K., & Radhakrishnan, T. (2011). *IEEE Transactions on Professional Communication*, 54, 43–55.

“Development projects in information and communication technologies may fail if local users perceive them as incompatible with existing work practices or cultural values. The present study examines cultural communication in the design of a prototype information-management system for the social service department of a developing Caribbean nation. The requirements-engineering process required communication within a culturally heterogeneous group of local and outside stakeholders. A capacity-building writing workshop sought to integrate the database into workplace practices. The experience highlights professional communication’s role in mediating cultural difference and facilitating stakeholders’ self-determination in the improvement of their work practices.”

Jenny West

Integrating intercultural communication into an engineering communication service class tutorial

Yu, H. (2011). *IEEE Transactions on Professional Communication*, 54, 83–96.

“Engineering programs in the US made notable efforts to develop students’ intercultural competence, but they tended to overlook the teaching of intercultural communication. Technical communication teachers can fill this gap by addressing intercultural issues in the service class. This proposal faces challenges: the lack of class time, teacher training, textbooks, and teaching methods. To address these challenges, this tutorial uses various materials and genre-based instruction to integrate intercultural communication into the service class. This approach helps to raise students’ intercultural awareness and sensitivity as they learn engineering communication genres. This tutorial may be used in service classes for other majors.”

Jenny West

There’s no place like home: UK-based financial analysts’ response to Dutch-English and British-English annual report texts

De Groot, E., Korzilius, H., Gerritsen, M., & Nickerson, C. (2011). *IEEE Transactions on Professional Communication*, 54, 1–17.

“The introduction of international financial reporting regulations has caused European multinationals to be increasingly reliant on the nonfinancial multimodal sections of the annual report as a means of informing and persuading international stakeholders. Due to the growing status of English as an international financial communication language, moreover, these annual report sections are usually produced in English. This experimental study compares the effectiveness of texts and photos in Dutch-English and British-English management statements from the perspective of financial analysts in the UK. The research results largely confirm the similarity-attraction hypothesis: Among UK-based analysts, typically British communication features often yield a more positive effect than the features that are typical of the Dutch-based statements.”

Jenny West

Management

An empirical investigation of the impact of individual and work characteristics on telecommuting success

Turetken, O., Jain, A., Quesenberry, B., & Ngwenyama, O. (2011). *IEEE Transactions on Professional Communication*, 54, 56–67.

“Individual and work characteristics are used in telecommuting plans; however, their impact on telecommuting success is not well known. We studied how employee tenure, work experience, communication skills, task interdependence, work output measurability, and task variety impact telecommuter productivity, performance, and satisfaction after taking into account the impact of communication technologies. Data collected from 89 North American telecommuters suggest that in addition to the richness of the media, work experience, communication skills, and task

interdependence impact telecommuting success. These characteristics are practically identifiable and measurable; therefore, we expect our findings to help managers convert increasing telecommuting adoption rates to well-defined and measurable gains.”

Jenny West

The illusive, writing productivity metric: Making unit cost a competitive advantage

Eleder, M. (2010). *Best Practices*, 13(1), 4–7. [Center for Information Development Management]

“Cost per topic” is a “fair, valid, reliable, and easy” metric for departmental writing productivity, “when calculated properly.” This article recommends that managers measure by topics instead of pages because a topic count gives writers incentive to produce more topics and eliminate unnecessary words. A topic count also “encourages reuse... [and] process improvement and tool development.” The article advises managers to include a trend line in graphical displays of topic counts and costs to statistically normalize data and present an actual picture of productivity over time. “By showing only the department average, individuals will feel protected from personal scrutiny, but will acknowledge that they have a personal stake in the measure.” The article states that the cost per topic method is consistently “beneficial in showing how productive the writing team really is.”

Lyn Gattis

Professional Issues

Freelance technical writers and their place outside corporate culture: High and low corporate culture styles

Brady, K. (2011). *Technical Communication Quarterly*, 20, 167–207.

“Freelance technical writers perform their work outside their clients’ corporate culture, and this occurrence is becoming more and more common. It is important to understand the significance of the separation between technical writers and corporate culture, especially

given that some freelance technical writers never meet their clients in person. Does corporate culture play a significant role for the freelance technical writing professional?”

J. A. Dawson

Research

Emerging methodologies in engineering education research

Case, J. M., & Light, G. (2011). *Journal of Engineering Education*, 100, 186–201.

Although this article focuses on engineering education research, the content is suited for anyone designing research projects. “Methodology refers to the theoretical arguments that researchers use in order to justify their research methods and design. There is an extensive range of well established methodologies in the educational research literature of which a growing subset is beginning to be used in engineering education research A more explicit engagement with methodologies, particularly those that are only emerging in engineering education research, is important so that engineering education researchers can broaden the set of research questions they are able to address Seven methodologies are outlined and for each an exemplar paper is analyzed in order to demonstrate the methodology in operation and to highlight its particular contribution. The methodologies are: Case Study, Grounded Theory, Ethnography, Action Research, Phenomenography, Discourse Analysis, and Narrative Analysis. It is noted that many of the exemplar papers use some of these methodologies in combination Seven methodologies are outlined and for each an exemplar paper is analyzed in order to demonstrate the methodology in operation and to highlight its particular contribution. The methodologies are: Case Study, Grounded Theory, Ethnography, Action Research, Phenomenography, Discourse Analysis, and Narrative Analysis. It is noted that many of the exemplar papers use some of these methodologies in combination.”

Sherry Southard

Using NVivo to answer the challenges of qualitative research in professional communication: Benefits and best practices tutorial

Hoover, R. S., & Koerber, A. L. (2011). *IEEE Transactions on Professional Communication*, 54, 68–82.

“Recent updates in qualitative data-analysis software have provided the qualitative researcher in professional communication with powerful tools to assist in the research process. In this tutorial, we provide a brief overview of what software choices are available and discuss features of NVivo, one prominent choice. We then use our experiences with the software to discuss how it enhances three specific dimensions of our research: efficiency, multiplicity, and transparency. We end with a compilation of best practices for using the software.”

Jenny West

Scientific Writing

Health literacy: Developing a practical framework for effective health communication

Lanning, B.A., & Doyle, E. I. (2010). *AMWA Journal*, 25, 155–161.

“Health literacy—the ability to read, understand, and act on basic health information—is a relatively new concept linked to health status. Recent reports indicate a national and international lack of health literacy skills, leaving many individuals vulnerable to poor health outcomes. Adequate health literacy is necessary for people to access health information, take control of their health management, and positively affect their overall health status. Health communication is an integral part of health literacy and is an essential skill in health promotion. We examine the concepts and definitions of health literacy and provide a framework for medical communicators to use in developing effective health communications.”

Dennis Chan

Meeting the challenges of health literacy: The medical communicator’s role

Nancekivell, S. (2010). *AMWA Journal*, 25, 146–148.

“Health literacy, the ability to access, read, understand, and act on basic health information, is a complex, pervasive problem.” In this introduction to three articles about health literacy, Nancekivell provides context about health literacy as well as useful resources about writing plainly for lay audiences, including ones particularly related to health literacy documents and patient education guides. She states that medical communicators “need to educate ourselves about the scope of the health literacy problem, equip ourselves with the necessary tools, especially the techniques of plain language and cultural competency, to make our health communications effective and actionable, and, most importantly, directly engage with our intended audiences.”

Dennis Chan

Opposing broad patent: Scientific American’s response to Morse v. O’Reilly (1848)

Youngblood, N. E. (2011). *IEEE Transactions on Professional Communication*, 54, 31–42.

“In 1848, *Scientific American*, a popular science and technology journal, published a series criticizing Morse v. O’Reilly’s (1848) confirmation of Samuel Morse’s broad telegraph patent and patenting scientific principles. It attacked the decision using copia and classification, rhetoric echoed by the Supreme Court and others in reversing the 1848 decision. The journal was particularly concerned with the case’s implications for Morse’s patent battles with Royal House and Alexander Bain. The articles offer an opportunity to examine the rhetoric of patent debates and differences in the rhetoric of professional and scientific journals without the emotional attachments of examining contemporary issues.”

Jenny West

Use of the passive voice in medical journal articles

Amdur, R. J., Kirwan, J., & Morris, C. G. (2010). *AMWA Journal*, 25, 98–104 [6-page appendixes].

“A common criticism of medical writing is excessive use of the passive voice, but there are no published data on its frequency in medical journal articles We studied the frequency of sentences with a passive voice construction in 3 types of articles from 3 medical journals: Opinion Papers, Review Articles, and Original Research Reports from the Journal of the American Medical Association, the New England Journal of Medicine, and The Lancet. To compare these results with those for a mainstream nonmedical publication, we also analyzed the frequency of passive voice in articles from the front page of The Wall Street Journal The wide range of passive voice frequencies recorded in this study suggests that writing with a high passive voice frequency is a style of choice rather than a requirement for publication. Our data suggest that a passive voice frequency of 10% is a reasonable upper limit for all types of medical articles because there were multiple articles in every analysis that met this standard. We recommend that medical journal editors make a passive voice frequency of $\leq 10\%$ a publication requirement for all types of articles.”

Dennis Chan

Writing for readers with a wide range of reading skills

Doak, L. G., & Doak, C. D. (2010). *AMWA Journal*, 25, 149–154.

“This article deals with medical writing for a wide audience—including those with low reading skills. The focus is on writing strategies that foster readers’ understanding, recall, and problem solving. Strategies include enhancing readability, placing context first before new information, using simple pictures to accompany text, and making the text look easy to read. Differences between readers with high and low reading skills are defined and explained. Individuals with low reading skills read more slowly, skip words, take words literally, and may miss the context. Research-based strategies to cope with the differences, along with examples, are offered. Briefly addressed are texts associated with videos, Web sites, and legal health

care-related documents. Methods to assess the suitability of documents are also described.”

Dennis Chan

Technology

Blogs and blogging: Current trends and future directions

Larsson, A. O., & Hrastinski, S. (2011). *First Monday*, 16(3), n.p. [http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/index]

“Adopting an interdisciplinary scope, this paper presents a review of research on blogs and blogging within the social sciences and the humanities. It maps out what kind of research has been completed, how it has been performed and what gaps that might need to be filled in this relatively new area of research. More specifically, the paper will analyze all articles on blogs and blogging published until 2009 and indexed by the *ISI Web of Knowledge*.”

Sherry Southard

Digital divides revisited: What is new about divides and their research?

Tsatsou, P. (2011). *Media, Culture & Society*, 33, 317–331.

“This article aims to critically review well established and recent trends in digital divides literature and research, examining what is new about divides and related research and making recommendations about future research. The key question the article attempts to answer is whether and the extent to which research on digital divides over the last two decades has managed to capture the scope and role of interactions between technology, society and politics when examining the nature and especially the importance of digital divides. To this end, this article discusses how digital divides have evolved in the last two decades and how research literature has approached their nature, scope and significance on the basis of different attempts at contextualization. On the one hand, it appraises the departure of conventional binary accounts and those restricted to access and usage factors of divides and

the introduction of the term ‘inclusion’ rather than ‘exclusion’. On the other hand, it suggests that digital divides be revisited in order to better contextualize them and that less linear explanations of the divides phenomenon should be developed. At the core of this suggestion the article builds the argument that the web of cultural traits in a society with its own gaps and disparities, as well as policy and regulation dynamics, are in a constant dialogue with technology, together influencing digital divides and holding implications for other forms of division in society.”

Sherry Southard

Does cloud computing have a silver lining?

Cubitt, S., Hassan, R., & Volkmer, I. (2011). *Media, Culture & Society*, 33, 149–158.

“There are almost certainly millions of servers associated with the internet. Cloud computing merely adds a new kind of service to those already available. But the addition of bulk storage for industry, academia and government is now a significant part of the overall load of internet server traffic, and a growing one. In what follows, we will explore the environmental impact of this growth in server use, suggesting that such accounting needs to be taken on board when migrating from local computing or from analog systems to the apparently weightless world of digital media and real-time remote access. We will concentrate on the server business of one of the major players in the digital market, Google What digital media have demonstrated is that a different type of economy is possible, one grounded in collaboration ... and peer-to-peer systems The intensification of private property rights over inventions, innovations and created works only serves to encourage the proliferation of copies, even when agreement is reachable on shared cross-platform technical standards. It is clear that proprietary solutions will benefit only sectors of a global network, not the whole system. For that, we require social as well as economic reactions to the emerging energy crisis of information.”

Sherry Southard

Environmental website production: A structuration approach

Stein, L. (2011). *Media, Culture & Society*, 33, 363–384.

“The World Wide Web has excited much speculation, and a growing body of scholarship, about its potential to advance the communicative power of social movement organizations. As a medium that enables online publishing, and selected features and functions, websites could be important in this regard. Yet, studies of social movement websites have documented these groups’ modest uses of the medium, and few scholars have studied the organizational factors shaping social movement website production. In this study, I examine US environmental group website production practices. Drawing on structuration theory, I consider how organizational priorities, processes and resources limit and constrain website production. I use structuration theory to analyze environmental group website production practices as gleaned from semi-structured interviews with 28 environmental group webmasters. I conclude that despite their awareness of the Web’s capabilities, webmasters experience production constraints related to organizational norms, knowledge, and resources. Ultimately, I aim to provide an explanation for studies that find limited uses of the Web among social movement groups, to better understand the processes and practices involved in cultural production online, and to elucidate on some of the challenges website production poses for social movement groups.”

Sherry Southard

Usability Studies

Enhancing customer service to increase a journal's marketability: Users' assessment of Mayo Clinic Proceedings' web-based tools

Wentz, P. [for Editorial Office, *Mayo Clinic Proceedings*]. (2010). *AMWA Journal*, 25, 105–108 [& 1-page appendix].

Because customer service is important to marketability, editors surveyed users to determine how to increase journal marketability. “This study was undertaken to assess users’ perceptions of and practices when using the Web-based manuscript submission and review system (ie, ScholarOne Manuscripts, formerly known as Manuscript Central) employed by Mayo Clinic Proceedings. Using the survey tool SurveyMonkey, the editorial office staff conducted a 16-question survey The recipients were 1,688 people with active user accounts in the database Of the 1,688 potential respondents, 462 (27%) completed the survey In conclusion, although only selected aspects of the Web-based manuscript submission and review processes were investigated in this survey, authors and reviewers were, in general, highly satisfied with these processes and the services received when using the Web-based system. Mayo Clinic Proceedings can use the suggestions provided by respondents to improve its customer service, increase the satisfaction of system users, and sustain the success of the journal.”

Dennis Chan

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